Wetlands Evaluation Report

State Road 87 Connector PD&E Study
Limits: From the Intersection of SR 87S and US 90 to SR 87 N

Financial Project ID #'s	Federal Aid Project #'s
41674832201	SFT1 296 R
41674832202	S129 348 R
41674842201	**TCSP 033 U**
41674842202	**T129 348 R**
41674842290	**T129 348 R**

ERC #: 09-143

P.O. Box 607
Chipley, FL 32428

April 2012
rev May 2012, November 2012
update February 2013
update January 2014

Ecological Resource Consultants, Inc.

Final Report:

Wetlands Evaluation Report

Project: SR 87 Connector PD&E

Financial Project ID #'s	Federal Aid Project #'s
41674832201	SFT1 296 R
41674832202	S129 348 R
41674842201	**TCSP 033 U**
41674842202	**T129 348 R**
41674842290	**T129 348 R**

ERC #: 09-143

Prepared for:

Florida Department of Transportation
Peggy Kelley, Project Manager
P.O. Box 607
Chipley, FL 32428

Prepared by:

Ecological Resource Consultants, Inc.
Corporate Office
100 Amar Place
Panama City Beach, FL 32413

Contact:

Martin Gawronski
Vice President of Regulatory Affairs
Tel 850-230-1882

EXECUTIVE SUMMARY

The State Road (SR) 87 Connector Project Development and Environment (PD&E) project is comprised of approximately 8 miles stretching between the intersection of US 90/SR 87 south and the intersection of SR 89/SR 87 north. The alignments are located north of the City of Milton and south of Whiting Field and cross both the Blackwater River and Clear Creek. The project is needed to provide an alternate connection from SR 87 south to SR 87 north to facilitate emergency evacuation, ease traffic, and increase the overall Level of Service (LOS) of the existing alignment.

Based on Florida Land Use Forms Classification System (FLUCCS), the alignments are currently dominated by wetland forested mix (FLUCCS #6300), hardwood coniferous – mixed (FLUCCS #4340), coniferous plantation (FLUCCS #4410), and rangeland (FLUCCS #3100 & #3300). There are approximately 57 acres of wetlands within the Alternative 1 alignment and approximately 56 acres of wetlands within the Alternative 2 alignment. Approximately 35 acres of wetlands within alignment 1 and 31 acres of wetlands within alignment 2 are proposed for direct impact. Approximately 22 acres are potentially proposed for shading in both alignments 1 and 2 and there will be approximately 190 acres of indirect and cumulative wetland impacts. Wetland impacts have been avoided and minimized to the maximum extent practicable by bridging the high quality, sensitive wetlands associated with the Blackwater River, Clear Creek, and reticulated flatwoods salamander critical habitat.

Based on the preliminary Uniform Mitigation Assessment Methodology (UMAM) evaluation, alignment 1 will result in 53.25 units of functional loss and alignment 2 will result in 50.60 units of functional loss. Impacts can be mitigated at either the Pensacola Bay Mitigation Bank or at the Yellow River Ranch or Dutex sites. An Environmental Resource Permit (ERP) and Sovereign Submerged Lands (SSL) authorization will be required from the Florida Department of Environmental Protection (FDEP) and a Clean Water Act (CWA) Section 404 dredge and fill permit will be needed from the United States Army Corps of Engineers (USACOE).

TABLE OF CONTENTS

LIST OF FIGURES

TABLES

APPENDICES

I. INTRODUCTION

A. General Purpose

The objective of the Project Development and Environment (PD&E) Study process is to provide the documentation necessary to determine the best route for the SR 87 Connector. The purpose of this new road is to provide a direct route for traffic on SR 87 in the south end of Santa Rosa County to access SR 87 north of Milton and to provide more direct access from I-10 to the Naval Air Station, Whiting Field. Factors under consideration include transportation needs, environmental issues, engineering, and cost. The process includes the preparation of a series of reports that document the research and analysis being conducted for these factors (Metric, 2011).

Generally, the PD&E process involves the following steps: (1) the establishment of project need; (2) the gathering and analysis of detailed information regarding the environmental features of the alignments; (3) the development of several alternatives for meeting the project need; and (4) the selection of a Preferred Alternative. During this process communication with the public is very important. This is accomplished through public meetings, interaction with various agencies, communication with elected officials, and meetings with local business owners (Metric, 2011).

B. General Project Description

SR 87 is the main north-south roadway in Santa Rosa County. SR 87 facilitates access between Navarre in the south to Milton and into Alabama. SR 87 is also a hurricane evacuation route for many. SR 87 is a designated hurricane evacuation route.

The existing roadway consists of rural and urban cross-sections, but generally is rural in nature. It passes over the Blackwater River through historic downtown Milton where it is a shared facility with US Highway 90 for 4.6 miles. Currently this facility is operating at a failing level of service (LOS F). The proposed SR 87 Connector will be a two-lane facility with right-of-way for a future four-lane divided facility.

C. Location

The alignments are located north of the City of Milton, Santa Rosa County, Florida and south of Whiting Field and cross both the Blackwater River and Clear Creek (Figure 1). Alignment 1 is approximately 7 miles long and Alignment 2 is approximately 8 miles long. Each alignment extends from US 90 north, crossing the Blackwater River, and then curves west towards SR 87N.

II. PURPOSE AND NEED

As described in the Alternatives Evaluation Report prepared by Metric Engineering and the PD&E study team (2011), the objective of the PD&E Study process is to provide the documentation necessary to determine the best route for the SR 87 Connector. The purpose of this new road is to provide a direct route for traffic on SR 87 in the south end of Santa Rosa County to access SR 87 in the north and to provide more direct access from I-10 to the Naval Air Station, Whiting Field. Factors under consideration include transportation needs, environmental issues, engineering, and cost. The process includes the preparation of a series of reports that document the research and analysis being conducted for these factors.

A. Emergency Evacuation

SR 87 serves as a vital evacuation route for northbound traffic destined for I-65 in Alabama. During times of hurricane force winds, both the Escambia Bay Bridge and the Garcon Point Bridge close leaving SR 87 north to the interstate and beyond as the only access out of the beach areas like Gulf Breeze and Navarre. SR 87 is also the only access into the area for Emergency First Responders; however, with a portion of the current alignment travelling along a congested portion of US 90, through historic downtown Milton, SR 87 cannot function as a contiguous roadway. The project will address future projected deficiencies on an established emergency hurricane evacuation route.

B. Multi-modalism

The project will also address the need for greater bicycle and sidewalk connectivity within the County with possible connections with the Blackwater Heritage Trail, enabling area residents' direct access. Unfortunately, Escambia County Area Transit does not provide service to this area of Santa Rosa County; however, in the future if such services were to be provided, the proposed facility would offer greater opportunities in regional network systems for transit. Finally, connection to the proposed Whiting Aviation Park will be considered. This park will be located on the east side of Whiting Field and will include a 6,000 foot runway currently under a joint use agreement with the Naval Base.

C. Social Demand and Economic Development

Santa Rosa County is not only a bedroom community to the greater Pensacola area, but in its own right, has also been experiencing considerable growth over the past year. This growth has spurred the need for an improved roadway network. In addition, major traffic generators in the area such as new residential developments, the Santa Rosa Criminal Justice Center, the Santa Rosa Corrections Facility, the Whiting Field U.S. Naval Air Station, the Team Santa Rosa Joint Planning area near Whiting Field, and the Santa Rosa Commerce Park in the US 90 corridor, would all benefit from the capacity this facility will provide. The need for the project is also related to committed trips associated with future development in the northern portions of Santa Rosa County, as

well as the future development in the US 90 corridor, which is hindered by the existing capacity limits of US 90.

D. Future Growth

Santa Rosa County has grown 173% since 1980 and is expected to grow another 92% by 2030. This increase will put further demand on the US 90/SR 87 segment, making growth and evacuation difficult due to a lack of roadway capacity. In Traffic Analysis Zones adjacent to the alignment, population is anticipated to grow by 2,648 from 2,029 to 4,677, or 131 percent, between 1997 and 2020. Employment is projected to increase by 575 from 908 to 1,483, or 63 percent. The number of dwelling units is forecasted to rise by 1,114 from 827 to 1,941, or 135 percent.

E. Traffic Data

According to the Santa Rosa County Comprehensive Plan, the current adopted Level of Service (LOS) standard for US 90 is D. In 2008, US 90 from Ward Basin Road to SR 87N had a failing level of service. Without the proposed improvement, the operating conditions will continue to deteriorate. The Raw Model Volume for the 2020 Needs Plan for this new segment is 9,472 vehicles per day. This would provide much needed relief to US 90.

F. Safety/Crash Rates

The information below contains crash data from the period of 2004 thru 2009 according to Florida Department of Transportation TSAT data base. On SR 87 south, from I-10 to US 90, between mile points 18.500 (I-10) and 19.769 (US 90), there were a total of 86 crashes, 47 of those were with injuries, and 39 with property damage only. The majority of the crashes in this segment occurred at the US 90/SR 87S intersection.

On US 90, from SR 87 south to SR 87 north, between mile points 11.610 and 16.202, there were a total of 234 crashes, 144 of those were with injuries, 1 fatality and 89 with property damage only. The majority of these crashes were distributed throughout the segment. There was, however, a slightly higher concentration of crashes at the US 90/SR 87N intersection. The single fatality in the segment occurred at milepost 13.847 just east of Ward Basin Road.

On SR 87N, from US 90 to Southridge Road, between mile points 0.004 and 11.362, there were a total of 166 crashes, 113 of those were with injuries, and 53 with property damage only. As with the segment along US 90, the majority of these crashes were distributed throughout the segment. There was, however, a slightly higher concentration of crashes at the US 90/SR 87N intersection.

The SR 87 Connector will include a new roadway to connect SR 87S and SR 87N. Presently, the SR 87 alignment follows along US 90, a congested roadway, for five miles. This portion of the alignment is operating at a LOS F and is the area where the only fatality in the alignment occurred. Improvements to the existing roadway in this vicinity

are difficult due to the historic downtown Milton area. By developing a new alignment that does not follow the existing US 90 alignment, the traveler would be able to avoid this high traffic area.

G. Plan Consistency

The proposed new facility is consistent with the Santa Rosa County Comprehensive Plan, and is also referenced in the County's Capital Improvements Schedule in Policy 4.1.E.3. The Comprehensive Plan design year for this facility is currently 2025, although as the project moves through the next study phase and a formal forecast traffic report is completed, the design year will change to allow for a standard twenty year forecast complying with Federal guidelines (Design Year 2035). Likewise, the proposed new facility is in the TIP and the STIP, as well as, in the Florida/Alabama TPO five-year work program.

III. WETLAND IDENTIFICATION, DELINEATION, AND DATA COLLECTION

A. Introduction

In accordance with Executive Order 11990, Protection of Wetlands, dated May 23, 1977, a wetland evaluation was conducted for the alternative alignments. The study alignments were evaluated relative to existing site conditions and possible impacts that would be associated with the road construction. Wetland identification was accomplished with aerial photographs, National Wetland Inventory (NWI) (U.S. Fish and Wildlife Service, 2010) maps, the Santa Rosa County soil survey, U.S. Geological Survey (USGS) topography maps, and onsite wetland delineation. Delineations followed the "Corps of Engineers Wetland Delineation Manual, Regional Supplement" (Army, 1987 & 2009), Chapter 62-340 of the Florida Administrative Code, and Part 2 Chapter 18 of the FDOT PD&E Manual (Wetlands and Other Surface Waters). Field investigations were conducted in September 2011, January 2012, and August 2012.

B. Methodology

ERC employed a three phase protocol to evaluate and delineate the extent and nature of wetlands in the proposed alignments. In phase 1, spatial data sources and other public sources of information were obtained and reviewed to develop a preliminary assessment of the physical and biological characteristics for the general area proposed for possible realignments. Several key references included *Florida Wetland Plants: An Identification Manual* (Tobe, et. Al., 1998), the *Soil Survey of Santa Rosa County, Florida* (USDA-NRCS, 1980), 7.5 minute Quadrangle Maps (U.S. Geological Survey), and the *Guide to Vascular Plants of the Florida Panhandle* (Clewell, 1985).

In phase 2, ERC conducted an analysis of historic and current maps and spatial data including a series of aerial photographs to more specifically characterize the ecological and physical characteristics of the land and surface waters for the areas proposed for possible realignments. ERC scientists with expertise in local ecosystems inspected the

areas proposed for the realignments and recorded soil, vegetative, and hydrological data. Information obtained from the initial site visits were combined with previous research to develop maps that depicted vegetative communities classified by the Florida Natural Areas Inventory (FNAI, 2009), land use classified by the Florida Land Use, Cover, and, Forms Classification System (FLUCCS) (North Florida Water Management District, 2007) and wetlands classified using the National Wetlands Inventory (NWI) (U.S Fish and Wildlife Service, 2010).

In phase 3, ERC selectively sampled representative polygons to verify, or ground-truth, the spatial data delineations of vegetative communities, land uses, and wetland types in the field. During the phase 3 field visits, ERC biologists delineated the regulated jurisdictional wetland habitats per State and Federal guidelines. These guidelines were consistent with the procedures specified in the Florida Administrative Code and the United States Army Corps of Engineers (USACOE) 1987 Wetland Delineation Manual and the 2009 regional supplement. ERC biologists marked the wetland boundaries in the field by placing numbered flags at closely spaced (between 5 and 30 feet depending on line of sight) intervals and recording each flag position using GPS. Maps depicting the location of each wetland flag were provided to surveyors for their use in obtaining exact positions of each wetland flag. All figures in this report depict the GPS located wetland flags and delineations, not the surveyed points. Final jurisdictional determinations will be made by State and Federal regulatory agencies.

C. Land Use

The existing land use within the alternative alignments was classified using FLUCCS. The dominant existing land use in both alignments was Wetlands Forested Mix, Hardwood Coniferous-Mixed, Coniferous Plantations, and Rangeland. The acreage and percent of existing land use cover by FLUCCS category is summarized in the following tables and depicted on Figure 7.

Table 1. Approximate FLUCCS Land Covers within Alternatives 1 and 2.

FLUCCS Code	FLUCCS Level 3 Descriptor	ACRES	ACRES
110	RESIDENTIAL, MEDIUM DENSITY <TWO-FIVE DWELLING UNITS PER ACRE>	0.0	1.4
120	RESIDENTIAL, MEDIUM DENSITY <TWO-FIVE DWELLING UNITS PER ACRE>	1.5	1.2
140	COMMERCIAL AND SERVICES	10.7	9.7
150	INDUSTRIAL	2.7	0.0
210	CROPLAND AND PASTURELAND	37.4	22.3
220	TREE CROPS	5.9	0.0
320	SHRUB AND BRUSHLAND	3.6	0.0
410	UPLAND CONIFEROUS FORESTS	217.1	251.1
420	UPLAND HARDWOOD FORESTS	3.6	3.6
434	HARDWOOD - CONIFEROUS MIXED	109.3	88.1
441	CONIFEROUS PLANTATIONS	51.0	108.6
443	FOREST REGENERATION AREAS	0.0	46.6

510	STREAMS AND WATERWAYS	6.7	6.7
610	WETLAND HARDWOOD FORESTS	14.4	12.5
630	WETLAND FORESTED MIXED	46.5	39.1
653	INTERMITTENT PONDS	4.6	4.6
631	WETLAND SHRUB	19.1	19.1
832	ELECTRICAL POWER TRANSMISSION LINES	55.8	55.8

The Future Land Use (Santa Rosa County, Florida, 2002) planned for this area is primarily agricultural mixed with industrial, single family residential, and conservation. The industrial future land use is located on the south side of alignments 1 and 2 at the intersection of SR 87 South and US 90 while the residential land use is located on the northern end of the alignments where they intersect with SR 87 North. The Future Land Use Map is included as Figure 9.

D. Soils

Soil Maps for the alignments using spatial data from the Soil Survey of Santa Rosa County, Florida (USDA, 1980) and are produced for this report as Figure 3. Selected points in delineations of the dominant soil survey map units were sampled using a bucket auger or soil probe to a depth sufficient to verify that the soil survey data was within the range of characteristics for the map unit or was a similar soil. Soils were also excavated to a depth of 12 inches or more using a tiling spade to classify the hydric soil status and characteristics of the upper soil profile. Photographs of these excavations and soil descriptions are in Appendix B.

Soils of the uplands are documented in Table 2. Table 2 also describes the depth to seasonal high water table and the approximate acreage of each non-hydric soil map unit in each alignment.

Table 2. Onsite Upland Soils Based on NRCS Soil Survey (Appendix B: Soil Photographs and Descriptions, Pages 1-5)

Soil #	Soil Name	Seasonal High Water Table	Alt.1 Acres	Alt.2 Acres
1	Albany Loamy Sand 0-5% Slopes	12-30”	17.7	17.7
5	Bonifay Loamy Sand 0-5% Slopes	>72”	14.7	12.1
9	Dothan Fine Sandy Loam 2-5% Slopes	42-48”	5.8	0.0
14	Fuquay Loamy Sand 0-5% Slopes	>72”	0.1	0.1
19	Kalmia Loamy Fine Sand 2-5% Slopes	>72”	0.8	0.8
21	Lakeland Sand 0-5% Slopes	>72”	20.5	47.0
22	Lakeland Sand 0-5% Slopes	>72”	3.0	3.0
34	Pactolus Loamy Sand 0-5% Slopes	18-30”	16.1	16.4
44	Troup Loamy Sand 0-5% Slopes	>72”	31.4	35.2

Soils of the wetlands are documented in Table 3. Table 3 also describes the depth to seasonal high water table and the approximate acreage of each hydric soil map unit in each alignment.

Table 3. Onsite Wetland Soils Based on NRCS Soil Survey (Appendix B: Soil Photographs and Descriptions, Pages 5-6)

Soil #	Soil Name	Seasonal High Water Table	Alt. 1 Acres	Alt. 2 Acres
3	Bibb-Krinston Association	<10”	22.1	22.1
37	Rains Fine Sandy Loam	0-10”	3.5	1.0
40	Rutlege Loamy Sand	At or Near Surface	20.7	20.7

E. Wetland Habitat Classification and Description

The delineated jurisdictional wetlands were classified according to the NWI/ Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, 1979) (see Figures 2.1 and 2.2). The acreage of each wetland classified by NWI is contained in Table 4, below. Wetland habitats were classified using the Florida Natural Areas Inventory (FNAI, 2009) (see Figure 8 and Table 5, below). The wetland habitats were also classified according to FLUCCS (see Figure 7 and Table 1 above). Tables 4 and 5 include delineated areas located within the alignment. Actual impacted acreages will depend on the final design.

Table 4. Wetlands Classification Based on NWI / Cowardin

NWI / Cowardin Classification	Alternative 1 (Acres)	Alternative 2 (Acres)
PF01/2F, Freshwater Forested/ Shrub Wetland	5.8	5.8
PF01F, Freshwater Forested/ Shrub Wetland	4.8	4.8
PF03C, Freshwater Forested/ Shrub Wetland	0.8	0.8
PF04/1B, Freshwater Forested/ Shrub Wetland	7.0	7.0
PSS1C, Freshwater Forested/ Shrub Wetland	0.4	0.5
PSS1F, Freshwater Forested/ Shrub Wetland	0.7	0.0
PF02/1F, Freshwater Forested/ Shrub Wetland	2.8	0.0
PF01/4C, Freshwater Forested/ Shrub Wetland	10.9	10.9
PF01C, Freshwater Forested/ Shrub Wetland	5.5	5.5
PF03/1C, Freshwater Forested/ Shrub Wetland	5.9	5.9
PSS1/3C, Freshwater Forested/ Shrub Wetland	0.6	0.6
PUBF, Freshwater Pond	0.3	0.3
R2UBH, Riverine	0.7	0.7

Table 5. Wetlands Classification Based on FNAI

FNAI Classification	Alternative 1 (Acres)	Alternative 2 (Acres)
Seepage Slope	23.48	23.23
Basin Swamp	10.28	10.28
Dome Swamp	1.43	0
Bottomland Forest	21.66	21.66

1. Seepage Slope / Wet Prairie (FLUCCS #643 – Wet Prairie/Pine Savanna)
(NWI Classification – Palustrine, Freshwater Forested/Shrub Wetland)
Alternative 1 = 23.48 acres
Alternative 2 = 23.23 acres
Seepage slopes are on landscapes where the downward movement of ground water is redirected laterally by less permeable layers in the soil, such as increased clay content or spodic horizons, and water flows at or near the ground surface saturating the soils. Many endemic and imperiled herbaceous plant species are associated with seepage slopes since large areas of this community have been converted to pine plantations and are susceptible to alteration by fire-suppressed growth of woody species. The majority of the seepage slope / wet prairie within the alignments is fire suppressed and dominated by black titi (*Cliftonia monophylla*), white titi *(Cyrilla racemiflora),* and galberry (*Ilex* glabra). In areas that have been mowed, such as the power line easements, greater plant diversity was observed.

2. Basin Swamp (FLUCCS #617 – Mixed Wetland Hardwoods)
(NWI Classification – Palustrine, Freshwater Forested/Shrub Wetland)
Alternative 1 = 10.28 acres
Alternative 2 = 10.28 acres
Basin Swamps are wetland plant communities characterized by long periods of inundation punctuated by dry periods. These areas are depressions in a relatively flat landscape and are dominated by a variety of canopy, subcanopy, and shrub species such as black titi *(Cliftonia monophylla),* pond cypress (*Taxodium ascendens*), swamp bay (*Persea palustris*), swamp tupelo (*Nyssa biflora*), sweetbay magnolia (*Magnolia virginiana*) and slash pine (*Pinus elliottii*). The basin swamps within the alignments are fire suppressed. The groundcover coverage is sparse and diversity is low, which is likely a result of intense competition with woody species.

3. Dome Swamp (FLUCCS #630 – Mixed Wetland Hardwoods)
(NWI Classification – Palustrine, Freshwater Forested/Shrub Wetland)
Alternative 1 = 1.43 acres
Alternative 2 = 0.0 acres
Dome Swamps are wetland plant communities characterized by long periods of inundation and occur in depressions in the landscape that may or may not be associated with other types of wetland systems (they may be isolated systems). Dome swamps typically have a partially or entirely closed canopy of cypress, black gum and sweet bay,

which also characterizes the dome swamps in the alignments. The subcanopy consists of cypress, sweet bay, swamp tupelo, and red maple (*Acer rubrum*). The Dome Swamps contain a thick woody shrub understory of St. John's wort (*Hypericum chapmanii*), titi, myrtle leaf holly (*Ilex myrtifolia*), and fetterbush (*Lyonia lucida*).

4. Bottomland Forest (FLUCCS #615 – Bottom; and Stream & Lake)

(NWI Classification – 1) Palustrine, Freshwater Forested/Shrub Wetland & 2) Riverine)

Alternative 1 = 21.66 acres

Alternative 2 = 21.66 acres

Bottomland Forests are wetland plant communities that are typically contiguous with riverine communities. Bottomland forests are seasonally flooded and influenced by precipitation. Bottomland forests have closed canopies and a mixture of evergreen and deciduous trees in the canopy. The bottomland forest in the alignments surrounds both the Blackwater River and Clear Creek, which are both blackwater streams that drain into the Pensacola Bay.

F. Potential Wetland Impacts

1. Direct and Shading Impacts

State and Federal agencies may exert jurisdiction over all wetland areas located within the alignments. Direct wetland impacts and impacts from shading will require permits from both agencies and mitigation will likely be required for the direct impacts. The State and Federal agencies use UMAM to determine the amount of mitigation required to offset impacts to wetlands and other surface waters. Agencies requiring permits will likely include:

- FDEP: Wetlands, Stormwater Treatment, and Sovereign Submerged Lands
- USACOE: CWA Section 404 Dredge and Fill Permit
- US EPA: NPDES Permit

The FNAI classification of wetland habitats was used for evaluating potential wetland impacts in the proposed alignment areas. The impacts were evaluated by comparing the current condition of each FNAI wetland habitat with the condition of a restored FNAI wetland habitat at a reference site. The condition of the restored habitat at the reference site indicates that the appropriate landscape treatments are being applied to the alignments, the appropriate surrounding land uses are present, and that there is an appropriate mix of flora and fauna.

The wetlands in the alignments are medium/high quality wetlands, based on the UMAM scoring procedure, since most wetland habitats resembled the reference condition. Anomalies exist where power lines have been constructed through wetlands, where silvicultural activities are conducted, and adjacent to development. In these disturbed areas, the wetland vegetation has either been mowed or the vegetation is fire suppressed and the appropriate ground cover species are not present.

2. UMAM Explanation

a. Location and Landscape

The pre-project location and landscape scores for the alignments ranged from moderate (7) to optimal (9) in the current condition due to the following factors: the location of the alignments and overall landscape; connectivity to the Blackwater River and Clear Creek; the relatively un-developed surrounding land use with a variety of natural conditions and connectivity; and a lack of significant barriers to wildlife movement. In the post-project condition, the wetlands proposed for direct impact have been scored "0" while those wetlands affected by indirect impacts, or shading due to bridges such as the floodplain of the Blackwater River, have been reduced by "2" points from the pre-project scores.

b. Water Environment

In general, the existing wetland hydrology supports the natural communities and no significant alternation in hydroperiods from historic patterns was documented. The impacts to hydrology are directly associated with adjacent silviculture and agriculture, primarily ditching and furrowing. Most of these effects are less pronounced within the floodplains of the Blackwater River. Some minor hydrologic impacts may be associated with roadways and power lines. The current conditions scores are in the optimal range and the direct impacts have been scored "0". There were no with project score decreases for the water environment UMAM parameter as a result of proposed shading and bridge construction.

c. Vegetation Structure

The principal components of the structure variable in this environment are: appropriate species; appropriate diversity and distribution of these species; appropriate vertical structure (i.e., canopy and groundcover); and the ability of the vegetation to carry and withstand a fire. Most of the wetlands within the alignments have been maintained in their appropriate conditions and current condition scores are in the optimal range (from 8 to 10) based upon the degree of vegetative alteration from fire suppression and/or typical disturbance regimes such as fallen trees from storms. Highly altered areas, such as those within the power lines and adjacent to agricultural areas received moderate scores. In the post-project scoring, the areas proposed for direct impact have been scored a "0" while those areas being shaded have been reduced by "1" or "2" points based on the type of vegetation located beneath the proposed roadway.

The UMAM polygon scores are included in Tables 7 and 8, below, and the full Part 1 and Part 2 UMAM polygon evaluation sheets are provided as Appendix C. Maps of the scoring polygon areas are included as Figures 8.1 through 8.9.

d. UMAM Summary

Alternative 1 traverses more wetland areas than Alternative 2. The following summary Tables 6 and 7 include the polygon name, wetland classifications (based on FNAI and

FLUCCS), acreage, polygon score, and functional loss for alignment alternatives 1 and 2, respectively.

Table 6. Alignment 1 UMAM Summary

Alignment 1 UMAM Summary Table

Polygon #	Impact Type	FNAI Wetland ID	FLUCFCS Wetland ID	Location & Landscape Support		Water Environment		Community Structure/Vegetation		Assessment Score	Area (ac)	FL Unit(s)
				Without	With Project	Without	With	Without	With			
1A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	9	0	0.93	2.95	2.75
1	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	7	10	9	9	7	0.17	15.13	2.52
2	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	9	0	9	0	8	0	0.87	0.04	0.03
3	Shading	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	8	8	8	7	6	0.07	2.02	0.13
4	Shading	Basin Swamp	617-Mixed Wetland Hardwoods	9	8	9	8	9	6	0.17	4.15	0.69
5	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	8	0	0.83	6.35	5.29
6	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	8	0	8	0	7	0	0.77	3.34	2.56
7	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	4.55	3.34
8	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	7	0	0.80	2.34	1.87
9	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	8	10	8	8	6	0.17	1.08	0.18
9A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	8	0	0.90	2.50	2.25
10	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	6	0	7	0	6	0	0.63	2.75	1.74
11	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	8.14	5.97
12	Permanent-Dredge or Fill	Dome Swamp	630-Mixed Forested Wetland	9	0	9	0	8	0	0.87	1.43	1.24
13	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	6	0	7	0	6	0	0.63	0.25	0.16
14	Indirect	Adjacent to Shading Impact		9	8	10	10	9	8	0.07	60.07	4.00
15	Indirect	Adjacent to Direct Impact		8	6	8	4	7	6	0.23	79.33	18.51
											Total FU>	**53.25**

Acreage Totals	
Direct Impacts	34.64
Shading Impacts	22.38
Indirect Impacts	139.40
Total Wetlands	196.42

Table 7. Alignment 2 UMAM Summary

Alignment 2 UMAM Summary Table

Polygon #	Impact Type	FNAI Wetland ID	FLUCFCS Wetland ID	Location & Landscape Support		Water Environment		Community Structure/Vegetation		Assessment Score	Area (ac)	FL Unit(s)
				Without	With Project	Without	With	Without	With			
1A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	9	0	0.93	2.95	2.75
1	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	7	10	9	9	7	0.17	15.13	2.52
2	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	9	0	9	0	8	0	0.87	0.04	0.03
3	Shading	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	8	8	8	7	6	0.07	2.02	0.13
4	Shading	Basin Swamp	617-Mixed Wetland Hardwoods	9	8	9	8	9	6	0.17	4.15	0.69
5	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	8	0	0.83	6.35	5.29
6	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	8	0	8	0	7	0	0.77	3.34	2.56
7	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	4.55	3.34
8	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	7	0	0.80	2.34	1.87
9	Shading	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	8	10	8	8	6	0.17	1.08	0.18
9A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottomland Stream & Lake Swamp	9	0	10	0	8	0	0.90	2.50	2.25
10	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	6	0	7	0	6	0	0.63	2.75	1.74
11	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	8.14	5.97
14	Indirect	Adjacent to Shading Impact		9	8	10	10	9	8	0.07	60.07	4.00
15	Indirect	Adjacent to Direct Impact		8	6	8	4	7	6	0.23	73.94	17.25
											Total FL>	**50.60**

Acreage Totals	
Direct Impacts	30.62
Shading Impacts	22.38
Indirect Impacts	134.01
Total Wetlands	187.01

3. Indirect and Cumulative Impacts

Indirect wetland impacts associated with the alignments are expected to be minor, but there may be impacts to wildlife utilization and hydrology. Roadway construction may increase risks to wildlife, such as traffic mortality, noise, and light, negatively impacting the location and landscape score. There will be little indirect and cumulative impacts to the Water Environment score since bridges will be used where feasible and culverts will be placed beneath the road where wetlands typically have surface flow. Bridges and

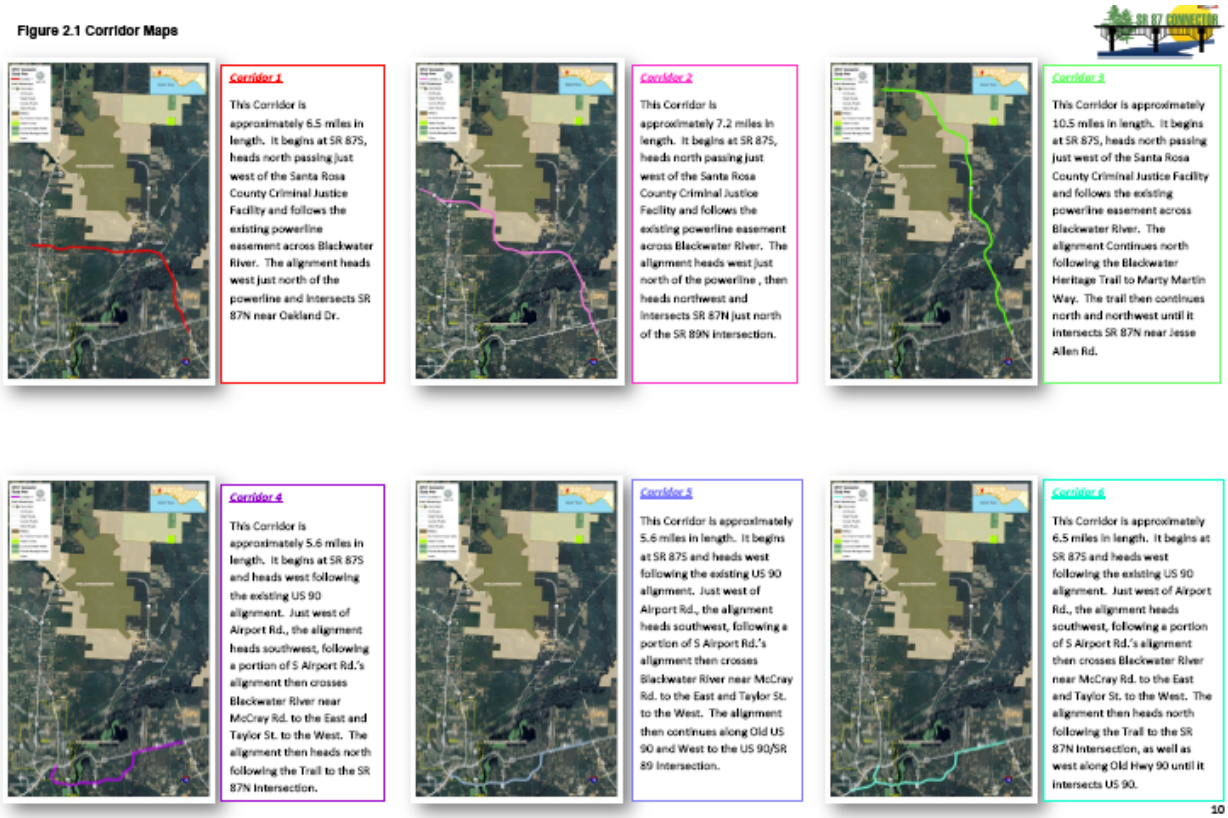
culverts placed at the appropriate elevations will minimize indirect and cumulative impacts. The Community Structure score may be negatively impacted by new roadway construction since there will be a new vector for invasive and exotic plant species to be transported to the alignments.

Indirect and cumulative impacts are typically assessed within a 300 foot buffer adjacent to the verified wetland boundaries. Typical UMAM score reductions are shown in the Tables 6 and 7 as polygons 13 & 14 (Figures 8.8 and 8.9) with an estimate of the functional loss; however, the wetland lines should be verified and the methodology for assessment reviewed with the regulatory agencies during the permit process. Additional cumulative impacts may not be assessed if mitigation is provided in the same sub-watershed.

IV. ALTERNATIVES EVALUATION

A. Alternatives Summary

Six different alignment alternatives and the no-build alternative were evaluated during the alternatives phase of the PD&E. The alternatives evaluation and the figure below, depicting the six original alignments, were documented in the *Corridors Alternative Evaluation Summary Report* (Metric Engineering, 2011).



(Metric, 2011- Page 10)

The alignment alternatives evaluation resulted in the elimination of Alternative 3, Alternative 4, Alternative 5, and Alternative 6. Alternatives 1 & 2 moved forward for additional analysis and comparison.

B. No-Build Alternative

NEPA and FHWA guidelines require an analysis to consider what would happen to the environment in the future if the proposed project was not built. The no-build alternative is not tenable due to the failing LOS for the existing corridor; however, it does provide a baseline condition to compare and measure the effects of all the build alternatives. Without the new corridor or extensive multi-laning of the north/south routes (SR 87, SR 89) and east/west route (US 90), this area, especially east of the Blackwater River Bridge, will continue to suffer from constrained conditions, and development east and north of Milton will be hindered.

C. Alternatives Evaluation

The results of the alignment evaluation indicated that alignment 1 was ranked the highest overall of the alignments. Alignment 1 scored high in terms of the project's purpose and need and was the least costly for construction. Table 9, below, from the "*Corridors Alternative Evaluation Summary Report,*" shows the overall rankings of each alignment considering each of the evaluated parameters:

Table 9 – Alternatives Evaluation Ranking Matrix

20% **Relative Weight**

.40 **Resulting Score**

Evaluation Parameter / Corridor	Purpose and Need 40%	Traffic 20%	Environmental 30%	Cost 10%	Final Rank (Score)
1	1 .40	1 .20	3 .60	4 .40	1 (1.60)
2	3 1.20	3 .20	5 1.20	5 .50	3 (3.10)
3	2 .80	5 .20	3 .90	6 .60	2 (2.50)
4	5 2.00	3 .80	2 1.20	1 .10	5 (4.10)
5	6 2.40	5 .80	1 .30	2 .20	4 (3.70)
6	4 1.60	1 .80	6 1.80	3 .30	5 (4.50)

(Metric, 2011 – Page 38)

Additional analysis was then conducted on alignments 1 & 2 since they resulted in a similar ranking and both met the purpose and need of the PD&E. Both alignments met the purpose and need and moved forward for further evaluation. The field assessments described in this WER were therefore conducted on both alignments 1 and 2 to determine the preferred alignment.

Alignment 1: Alternative 1 would extend north from the US 90 and SR 87S intersection, crossing the Blackwater River near the existing power line easement. Then the roadway would run adjacent to the power line easement and connect with SR 87N near the southern split of SR 87N and SR 89 within the Manning Lane right-of-way. This alternative would be approximately 6.5 miles in length. See Figure 1 for the location of alignment 1.

Alignment 2: Alternative 2 is the same as Alternative 1 for the first portion, crossing the Blackwater River in the same area, but continuing north and running adjacent to the Clear Water Creek desired Florida Forever purchase area. Then the roadway would continue west to connect with SR 87N near the northern split of SR 87N and SR 89. This alternative would be approximately 7.2 miles in length. See Figure 1 for the location of alignment 2.

D. Avoidance and Minimization

1. Avoidance

The alternative analysis documented how wetland impacts were avoided to the maximum extent practicable, given the project needs, costs, and logistics. An alternatives evaluation analysis was conducted and the results were summarized in the *Corridors Alternative Evaluation Summary Report* (Metric, 2011). Avoidance of project related impacts was considered and evaluated in relation to the logistics of the proposed alignments and the project purpose. The southern alignments 4, 5, & 6 impacted more wetland acreage than the northern alignments 1, 2, & 3 (see Table 9, below). In addition to the quantity of wetland impacts, the southern alignments did not meet the needs of the project and would have impacted State of Florida conservation lands owned by the NWFWMD. After consideration, the three southern alignment alternatives were eliminated from further analysis.

Table 9 – Estimated National Wetland Inventory Impacts for Alignments 1-6

		Alignments					
Criterion		***1***	***2***	***3***	***4***	***5***	***6***
Total Alignment Acres		***411.28***	***500.26***	***626.72***	***345.76***	***338.35***	***406.40***
NWI Wetlands (Acres)	Palustrine	92.58	90.37	44.67	108.77	105.8	126.82
	Estuarine	0	0	0	16.03	16.03	16.03
	Total	92.58	90.37	44.67	124.8	121.83	142.85
	% of Total	23%	18%	7%	36%	36%	35%

Out of the remaining three northern alignment alternatives, alternative 3 had the least potential wetland impact; however, it traversed land purchased by the FDEP as part of the Florida Forever project. Due to this logistical concern, alignment 3 was no longer feasible to meet the purpose of the project. Alignments 1 & 2 have remained for further evaluation since they avoid the most wetland areas possible while still meeting the public need and project purpose. Avoidance of all wetland impacts was not feasible along the length of the project. Wetlands have been avoided to the maximum extent practicable.

Table 10 – Alignments 1 and 2 Delineated Wetland Impacts by Habitat Type

Habitat Type (FNAI/FLUCCS)	Alignment 1 Impact (acres)	Alignment 2 Impact (acres)
Seepage Slope - Wet Prairie / 643	23.48	23.23
Basin Swamp / 617	10.28	10.28
Dome Swamp / 630	1.43	0
Bottomland Forest / 615	21.66	21.66
Total	**56.85**	**55.17**

2. Minimization

Potential wetland impacts have also been minimized to the maximum extent practicable with the use of bridges, stormwater collection methods, construction methodology, and with the maintenance of pre and post hydrological flow between wetlands and streams. Bridges are proposed over Blackwater River and its floodplain, Clear Creek and its floodplain, and wetlands associated with the reticulated flatwoods salamander Critical Habitat Area. Figures depicting the previously considered alignments as they relate to minimization of wetland impacts are included in Appendix F. Potential wetland impacts were estimated based on each alignment shift, revision, or reduction (including revisions to bridge length). The first wetland impact acreage was calculated after the initial wetland delineation in September 2011 and resulted in 129 acres of potential wetland impact. Based on the alignment revisions, the current potential wetland impact is 55 acres (+/-).

a. Bridges and Stormwater Treatment

i. Blackwater River Floodplain

Both alternatives cross the Blackwater River and its floodplain area. In order to minimize direct, indirect, and long-term impacts, the entire floodplain area will be bridged. At the start of the bridge, a retaining wall will be constructed 25 feet landward of the jurisdictional wetland line to buffer the wetlands. The maximum amount of stormwater possible, given the land elevation at the start of the bridge south of the river, will be captured from the roadway surface and conveyed to stormwater ponds

located to the north and south of the floodplain area to minimize runoff into the river or the wetlands below the bridge. The bridge over the Blackwater River will be 5,570 ft. long, 100 feet wide (in two separate sections – 56 feet wide and 49 feet wide), and 28.25 ft. above the ground. The height and width of the proposed bridges are adequate to provide light penetration to the ground and allow for groundcover regrowth and survival. Typical Sections and Profile Sheets have been included as Appendices G and H, respectively.

ii. Wetlands Associated With Reticulated Flatwoods Salamander Critical Habitat

Both alternative alignments traverse the critical habitat area of the reticulated flatwoods salamander. In order to minimize impacts to wetlands that serve as potential breeding habitat, the alignments were shifted to roughly parallel the power line easement on the southernmost edge of the critical habitat unit, which is already a disturbed linear feature traversing this area. In an effort to minimize direct impact to the wetlands, all of the wetland area traversed by the alignment will be bridged. Stormwater treatment systems will convey all runoff from the bridge to stormwater ponds to avoid and minimize impacts to wetlands and water quality under the bridge. The bridge through the critical habitat is a continuation of the bridge over the Blackwater River, 100 feet wide (in two separate sections), and 28.25 feet above the ground. The height and width of the proposed bridges are adequate to provide light penetration to the ground and allow for groundcover regrowth and survival. Typical Sections and Profile Sheets have been included as Appendices G and H, respectively.

iii. Clear Creek

Both alternatives cross Clear Creek and its floodplain area. In order to minimize direct, indirect, and long-term impacts, the open water portion of the creek and a portion of the floodplain will be bridged. The bridge length was determined based on the analysis conducted for the Bridge Hydraulics Report (Metric, 2012). The primary goal of the bridge is to reduce upstream flooding and to allow the creek to flow unobstructed to receiving waterbodies. Bridging the entire floodplain is not feasible since the length of the bridge over the Blackwater River and the reticulated flatwoods salamander critical habitat unit significantly increased in length resulting in an increase in overall projected construction costs. The bridge over Clear Creek will help to minimize impacts to the creek bed, which provides habitat for many aquatic organisms. Stormwater will be captured from the roadway surface and conveyed to stormwater ponds located to the north and south of the floodplain area to minimize runoff into the creek or the wetlands below the bridge. The bridge over Clear Creek will be 160 ft. long, 100 feet wide (in two separate sections), and 28.25 ft. above the ground. The canopy and some shrubs will be impacted long term by the bridges and groundcover will be impacted during construction. The height and width of the proposed bridges are adequate to provide light penetration to the ground and allow for groundcover regrowth and survival. Typical Sections and Profile Sheets have been included as Appendices G and H, respectively.

b. Construction methodology

During construction, wetlands outside of the limits of construction will be protected from impacts using standard construction Best Management Practices (BMPs). Bridge construction will occur from retaining wall to retaining wall to prevent sediment deposition within floodplains and stream systems.

c. Hydrological Connections

Connections and hydrological flows between wetland systems will be maintained by using culverts to connect wetlands that may be bisected by the proposed roadway alignments. Prior to final design, the areas of existing flow will be demarcated so that culverts can be placed at the appropriate locations and elevations. The use of culverts will ensure post-project flow regimes similar to the current condition and will prevent flooding, which will help to maintain wetland hydroperiod and function.

d. Threatened and Endangered Plant and Animal Species

No Federally listed wildlife species or plant species were observed during the field survey; however, critical habitats of the reticulated flatwoods salamander and Gulf sturgeon were located within the alignments. Impacts to these critical habitats will be minimized by constructing as described above. The only State listed animal species observed was the gopher tortoise; however, this species is not wetland dependent and the minimization measures described in this WER will have no beneficial impact to this species. FDOT will commit to pre-construction surveys and will coordinate with the FWC during design/build phase of the SR 87 Connector project. State-listed plants likely exist in the project alignment areas since suitable habitat areas occur based on habitat mapping. Pedestrian searches of these habitat areas were conducted for each state listed species. The Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Agriculture and Consumer Services (DOACS) and Endangered Plant Advisory Council (EPAC) are being notified that FDOT as owner is allowing for salvaging by others of affected protected plants on this project prior to construction in accordance with state law (Chapter 581.185, Florida Statutes), pending their receipt of the appropriate permits. ***It is our conclusion that protected plants potentially occurring within the project corridor will be impacted and may be salvaged in accordance with state law (Chapter 581.185, F.S.).*** Complete results, analysis, and determinations of effect for species are contained in the Endangered Species Biological Assessment Report (ESBAR) (ERC & Metric, 2012).

C. Mitigation / Impact Compensation

Wetland impacts are typically mitigated pursuant to Section 373.4137 Florida Statutes. In accordance with Florida Highway Administration (FHWA) policy, as contained in 23 CFR 77.11, the full range of mitigation options are being considered in developing this project to avoid long and short-term adverse impacts to wetland resources and to avoid new construction in wetlands wherever there is a practicable alternative. Alignment 1 results in a functional loss of 53.25 units and Alignment 2 results in a functional loss of

50.60 units, which includes indirect and cumulative impacts. To compensate for this functional loss, there are two options: Option 1 is the purchase of credits from the Pensacola Bay Mitigation Bank (PBMB), and option 2 is NWFWMD mitigation. The Interagency Review Team (IRT) will evaluate the options below to determine the most suitable mitigation option during the permitting of the proposed alignment impacts. Currently, 373.4137 F.S. allows FDOT any mitigation option that meets Federal and State Requirements.

1. PBMB

The PBMB is a 1,200 acre site located in Santa Rosa County that offers hardwood, pine flatwoods, and herbaceous wetlands credits. The PBMB was permitted using UMAM and has "like-for-like" credits available to offset potential alignment impacts. Credits for the PBMB are currently priced between $25,000 and $50,000 per credit and there are approximately 25 credits available for purchase at this time. The restoration activities that are required to obtain credit release are continuing on the PBMB and it is anticipated that additional credits will be available at the time of construction.

2. NWFWMD Mitigation

In Northwest Florida, mitigation is analyzed under the Northwest Florida Umbrella, Watershed-based, Regional Mitigation Plan (UWRMP), which was established in 2006. The UWRMP is a cooperative agreement between the NWFWMD and the USACOE. The team identifies mitigation options for projected impacts and develops mitigation plans. There are two mitigation areas within the Pensacola Bay Watershed with credits available, the Yellow River Ranch Site and the Dutex Property. The Yellow River Ranch site is located in the proximity of the SR 87 alignments and has approximately 50 credits available. The Dutex property is located within the Perdido watershed and has approximately 110 credits available.

D. Wildlife

Threatened and endangered plant and animal species potential occurrence were evaluated using known occurrence data for Santa Rosa County from FNAI Florida Element Occurrence records and by conducting field surveys, which traversed 80% or more of the habitat with transects. The State threatened animal species in the alignments were located within uplands and will typically not be considered during the wetland permitting process. The State threatened and endangered plant species were primarily located within wetlands and have been considered in the community structure scoring of the UMAM evaluation. The complete findings of threatened and endangered species survey are included in the SR 87 PD&E ESBAR (ERC & Metric, 2012).

E. Floodplains

The majority of the alignments are located within Floodzone X, which is not a Special Flood Hazard Area (SFHA) (FEMA, 2011). Where the alignments cross Blackwater River and Clear Creek, they are located within Floodzone AE, which is a SFHA. Bridges have been proposed in both locations where the alignments traverse the SFHAs. The only

impacts to these areas will be from sideslopes to create headwalls for the bridges and pilings.

Both alignments have the same 94.22 acre impact to floodplains. The bridge over the Blackwater River will be approximately 5,570 linear feet and the bridge over Clear Creek will be approximately 160 linear feet. There are currently no existing bridges in the proposed locations.

F. State Lands

The Blackwater River and Clear Creek were determined to be Sovereign Submerged Lands (SSL) by the FDEP Division of State Lands. Public easements will be required for the bridges over the Blackwater River and Clear Creek. The FDEP State Lands determination is included as Appendix E.

V. AGENCY COORDINATION & REQUIRED PERMITS

The State and Federal agencies will exert jurisdiction over the wetlands and waters delineated within the alignment areas. Coordination with the regulatory agencies will continue through the design phase to evaluate permitting and mitigation requirements. The project is anticipated to require an Environmental Resource Permit (ERP) from the FDEP since Sovereign Submerged Lands are involved, and a Section 404 dredge and fill individual permit from the USACOE. This project will also require a National Pollution Discharge Elimination System (NPDES) permit from the U.S. Environmental Protection Agency (EPA) since one or more acres of land are proposed to be filled. The FDOT will coordinate with the FDEP, USACOE, EPA, National Marine Fisheries Service (NMFS), US Fish and Wildlife Service (USFWS), and the Florida Fish and Wildlife Conservation Commission (FFWCC) regarding potential impacts to wetlands and wildlife species.

On May 21, 2010 Peggy Kelley (FDOT), John Flora (Metric), and Daniel Van Nostrand (ERC) met with the FDEP – Division of State Lands and the Northwest Florida Water Management District (NWFWMD) to discuss the public lands and desired Florida Forever tracts in the vicinity of the proposed corridors. The FDEP stated that corridors 2 and 3 traversed areas that were desired for purchase with Florida Forever funds. The NWFWMD stated that they owned lands within the Blackwater River that were within the paths of corridors 4, 5, and 6, south of Highway 90. The NWFWMD comments were significant in the decision to eliminate the southern corridors (4, 5, and 6) from further review.

On June 30, 2011, FDOT was notified by FDEP that funds were obtained to purchase Florida Forever lands northeast of Whiting Field. Corridor 3 traversed this land acquisition area. FDEP does not allow road construction through Florida Forever tracts and Corridor 3 was eliminated from further review.

FHWA received a notification letter from the US Coast Guard stating that bridge permitting would not be required for this project, if FHWA makes the determination that the project meets the requirements for the Surface Transportation Act (STAA). FDOT and FHWA will conduct further coordination regarding this determination. A copy of the memo is provided below:

U.S. Department of Homeland Security
United States Coast Guard

Commander
Eighth Coast Guard District
Hale Boggs Federal Building

500 Poydras Street, Room 1313
New Orleans, LA 70130-3310
Staff Symbol: (dpb)
Phone: (504) 671-2128
Fax: (504) 671-2133
D8DPBALL@uscg.mil

16591C
March 9, 2012

RECEIVED
MAR 13 2012
ENVIRONMENTAL MANAGEMENT OFFICE

Ms. Joy Giddens
Environmental Permits Director
Florida Department of Transportation
P.O. Box 607
Chipley, Florida 32428

Dear Ms. Giddens:

We have reviewed your information package, pertaining to Florida Department of Transportation's proposed project crossing the Blackwater River at Milton, in Santa Rosa County, Florida. We understand that this bridge project may be federally funded.

As part of our project review, we received a Bridge project Questionnaire from the Finley Engineering Group, Inc., dated December 20, 2011 along with a site map and pictures of the proposed bridge site. Based on our observations and the information that was provided, as well as the fact that Federal funds may be utilized for this project, it appears that the waterway, at the site of the bridge, would meet the criteria for the Surface Transportation Act of 1978 (STAA). In such cases, FHWA has the responsibility for the STAA under 23 U.S.C. 144(h) and would make the determination as to whether or not a Coast Guard Bridge Permit would be required. Based on 23 CFR Part 650.805, a Coast Guard Bridge permit would not be required if the FHWA determines that the proposed construction, reconstruction, rehabilitation or replacement of the federally funded or federally assisted funded bridge crosses waterways which (1) are not used or are not susceptible for use in their natural condition, or by reasonable improvement as a means to transport interstate or foreign commerce; and (2) which are not tidal, or if tidal, used only by recreational boating, fishing, and or other small vessels less than 21 feet in length.

Should FHWA determine that Blackwater River, at the bridge location, meets the criteria for the STAA, the Coast Guard would accept that determination and the project would be exempt from Coast Guard Bridge Administration purposes. Therefore, I suggest that you contact the FHWA Division Administrator in Tallahassee, Florida, regarding this proposed bridge project, and that you request that FHWA review the proposed project to determine if it meets the criteria for the STAA.

If you have any questions or if we can be of additional assistance please contact our office.

Sincerely,

DAVID M. FRANK
Chief of the Bridge Administration Branch
U. S. Coast Guard
By direction

Copy: Mr. Martin C. Knopp, P.E., Division Administrator, FHWA, Tallahassee, FL

VI. CONCLUSION

Both alignment alternatives will impact wetlands. The impacts and functional UMAM loss are summarized in the following table:

Criteria	Alignment 1	Alignment 2
Direct Impact	34.64 Acres	30.62 Acres
Shading Impact	22.38 Acres	22.38 Acres
Indirect and Cumulative Impacts	139.40 Acres	134.01 Acres
Functional Loss (UMAM)	53.25 Units	50.60 Units

In order to avoid and minimize project related impacts, the Blackwater River and Clear Creek will be bridged, culverts will be used to connect impacted wetlands, and BMPs will be used to prevent impacts to wetlands outside of the construction boundary. Mitigation for unavoidable impacts can be accomplished by either using mitigation bank credits or Senate bill mitigation. Coordination with State and Federal regulatory agencies will be required for wetland impacts.

Required Permits

1. FDEP ERP Permit (For Wetlands and Stormwater Treatment)
2. FDEP SSL Authorization (Public Easement)
3. USACOE CWA Section 404 Dredge and Fill Permit
4. US EPA NPDES Permit

VII. REFERENCES

Center for Plant Conservation, Missouri Botanical Garden. 1995. An Action Plan to Conserve the Native Plants of Florida. Southeast Environmental Research Program, Florida International University and Center for Plant Conservation.

Chafin, Linda G. 2000. Field Guide to the Threatened and Endangered Plants of Florida. Florida Natural Areas Inventory, Tallahassee, Florida.

Clewell, A.F. 1985. Guide to the Vascular Plants of the Florida Panhandle. University Press of Florida, Gainesville, Florida.

Clewell, A.F. 1985a. Natural Setting and Vegetation of the Florida Panhandle. Florida State University Press, Tallahassee, Florida.

Coile, Nancy. 1996. Notes on Florida's Endangered and Threatened Plants. Florida Department of Agriculture & Consumer Services, Division of Plant Industry. Gainesville, Florida.

Cowardin, L M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. Prepared for U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Ecological Resource Consultants, Inc. 2012. Endangered Species Biological Assessment: SR 87 Connector PD&E Study. Panama City Beach, Florida.

Ewel, K. C. 1990. Ecosystems of Florida. University Presses of Florida. Gainesville, Florida.

Florida Game and Freshwater Fish Commission Nonage Wildlife Report. Technical Report No. 7. Summary Report on the Vascular Plants, Animals and Plant Communities Endemic to Florida. June 1989.

Florida Natural Areas Inventory (FNAI). 2010. Guide to the Natural Communities of Florida: 2010 Edition. Florida Natural Areas Inventory, Tallahassee, Florida.

Florida Natural Areas Inventory (FNAI). 2008. Florida Natural Areas Inventory, Tallahassee, Florida. Floodpl_v3 shapefile (www.fnai.org).

Florida Natural Areas Inventory. 2001. Field Guide to the Threatened and endangered Animals of Florida. Florida Department of Environmental Regulation. Office of Environmental Services, Tallahassee, Florida.

Florida Natural Areas Inventory. 1990. Guide to Natural Communities. Florida Department of Environmental Regulation. Office of Environmental Services, Tallahassee, Florida.

Godfrey, R. K. 1988. Trees, Shrubs and Woody Vines of Northern Florida and Adjacent Georgia and Alabama. University of Georgia Press, Athens, Georgia.

Metric Engineering. 2011. Corridor Alternatives Evaluation Summary Report, SR 87 Connector PD&E Study. Chipley, Florida.

Metric Engineering. 2012. Bridge Hydraulics Report, SR 87 Connector PD&E Study. Chipley, Florida.

Northwest Florida Water Management District. 2007. NWFWMD Springs January 2007 shapefile. Florida Geographic Data Library website (www.fgdl.org).

Santa Rosa County, Florida. 2002. Community Planning, Zoning and Development Division. FLUM Santa Rosa County shapefile.

Tobe, J. D., K. C. Burks, R. W. Cantrell, M. A. Garland, D. W. Hall, P. Wallace, G. Anglin, G. Nelson, J. R. Cooper, D. Bickner, K. Gilbert, N. Aymond, K. Greenwood and N. Raymond. 1998. Florida Wetland Plants: An Identification Manual. University of Florida, Institute of Food and Agricultural Sciences.

USDA-Soil Conservation Services. 1980. Soil Survey of Santa Rosa County, Florida. Gainesville, Florida.

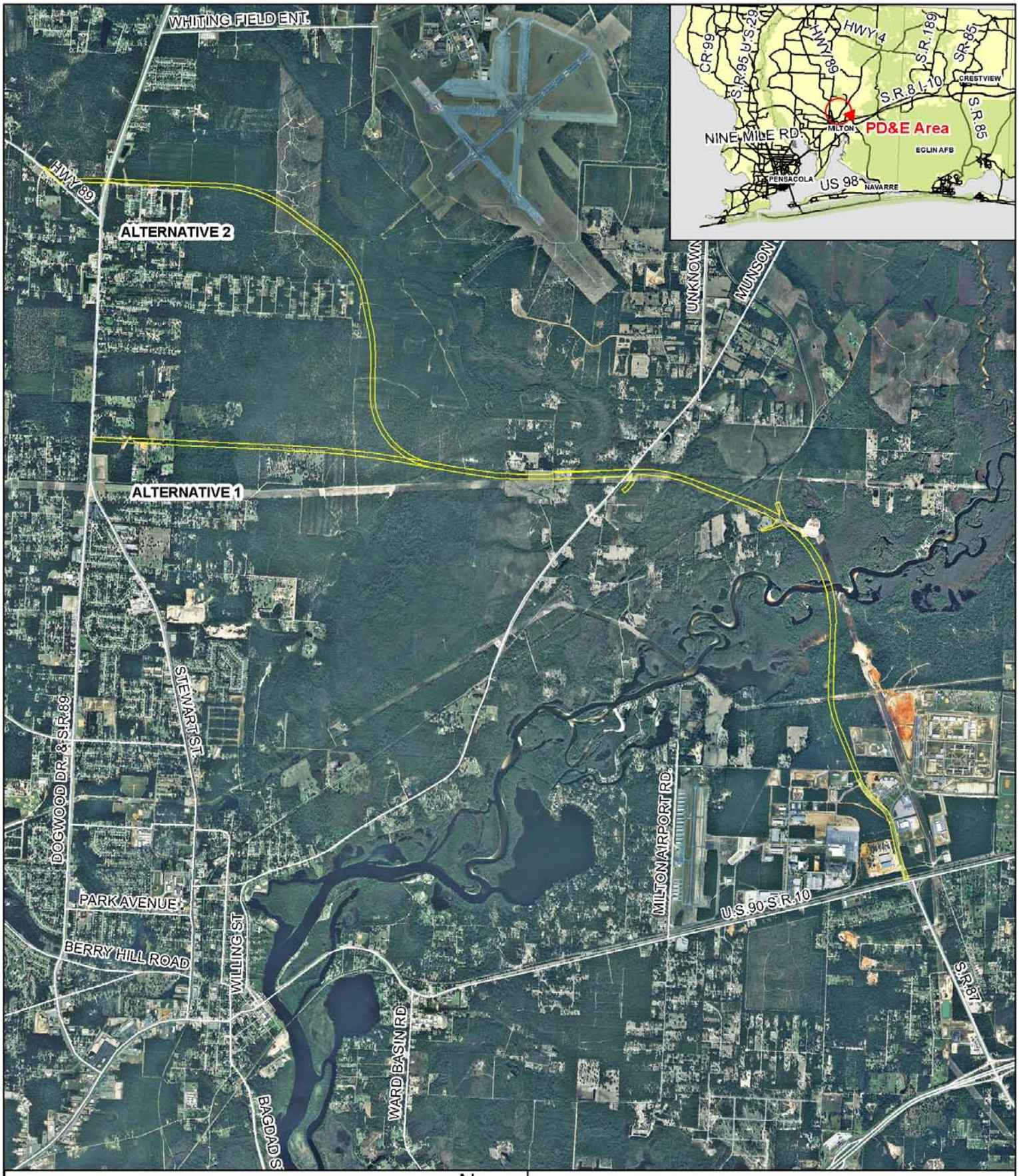
U.S. Department of Agriculture, Natural Resources Conservation Service. Soil Survey Geographic (SSURGO) database for Santa Rosa County, Florida shapefile. USDA, NRCS, Texas. February 1, 2010. http://soildatamart.nrcs.usda.gov/

U.S. Fish and Wildlife Service. 2010. Branch of Habitat Assessment, Washington, D.C. National Wetlands Inventory shapefile. U.S. Fish and Wildlife Service website (www.fws.gov/wetlands/)

Wood, Don A. 1996. Florida's Endangered Species, Threatened Species and Species of Special Concern. Bureau of Nongame Wildlife, Florida game and Fish Water Fish Commission.

Wunderlin, R. 1998. Guide to the Vascular Plants of Florida. University of Florida Press, Gainesville, Florida.

Overall Figures 1-5



Legend:

Alignments

N

1:48,000
2010 True Color
Aerial

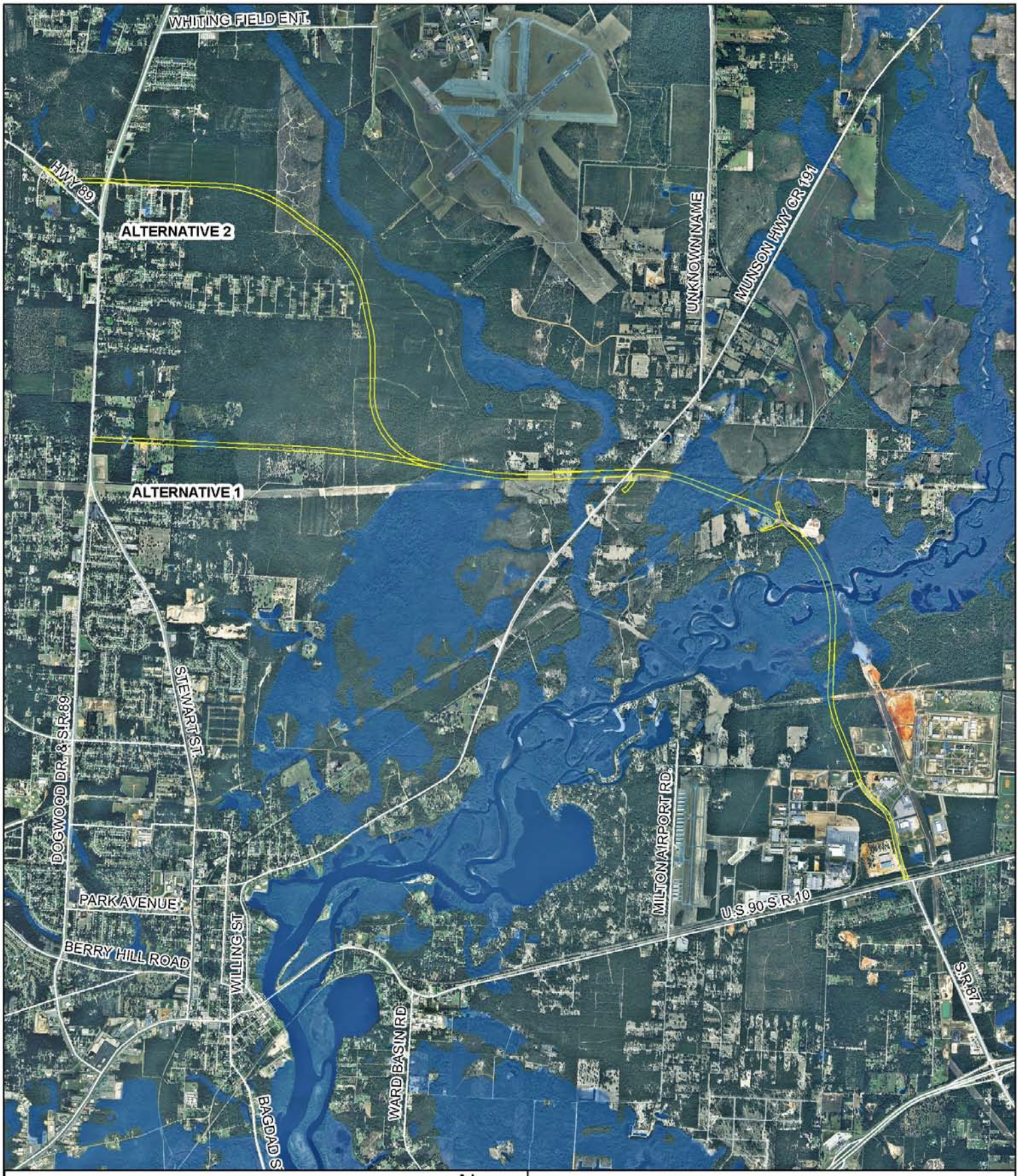
0 2,000 4,000 8,000 12,000 Feet

Figure 1 Location Map: SR 87 Alternative Alignments

SR 87 Connector PD&E

erc Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

National Wetlands Inventory (USFWS, 2010)

Alignments

N

1:48,000

2010 True Color Aerial

0 2,000 4,000 8,000 12,000 Feet

Figure 2 Wetlands per NWI

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

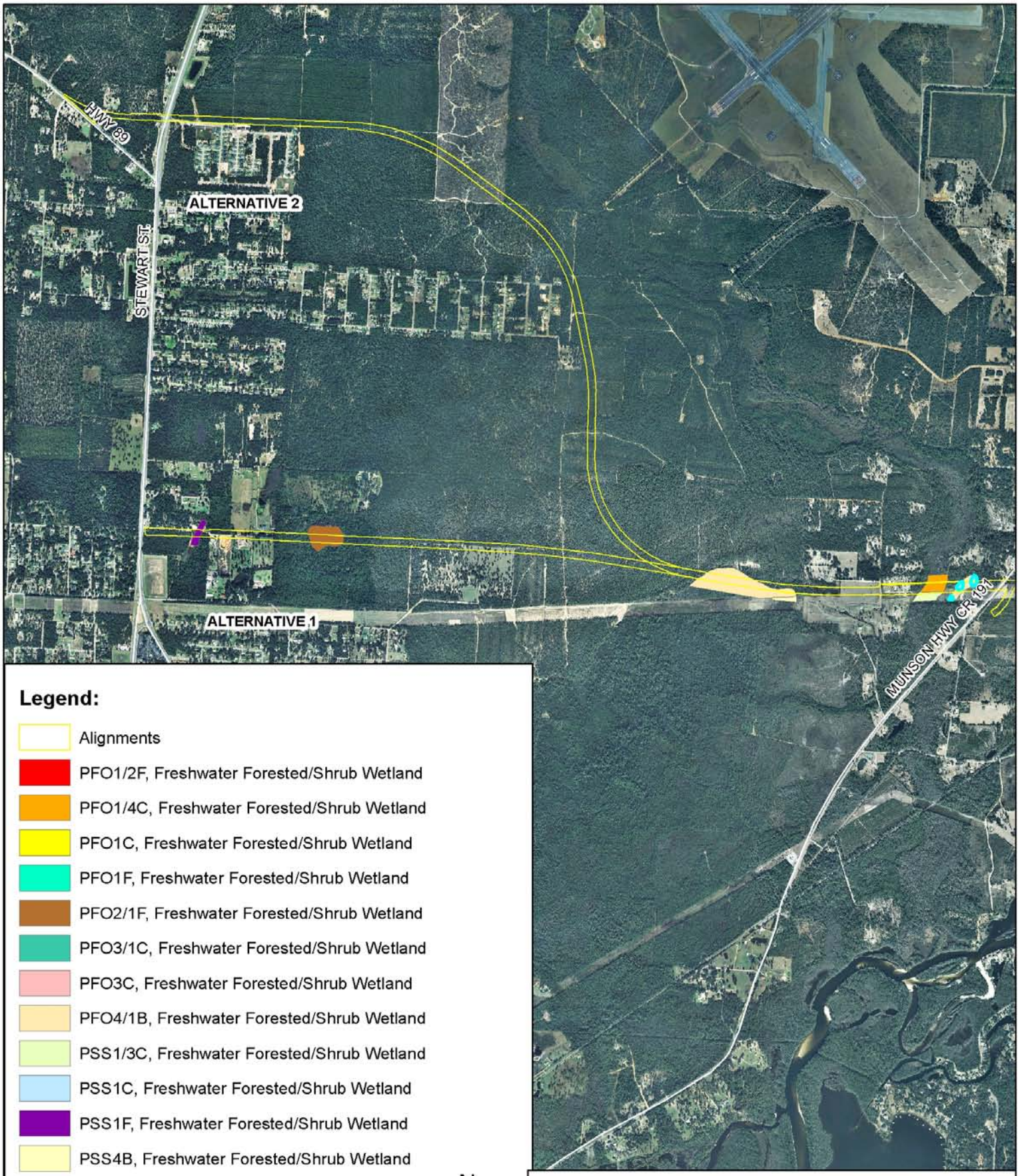
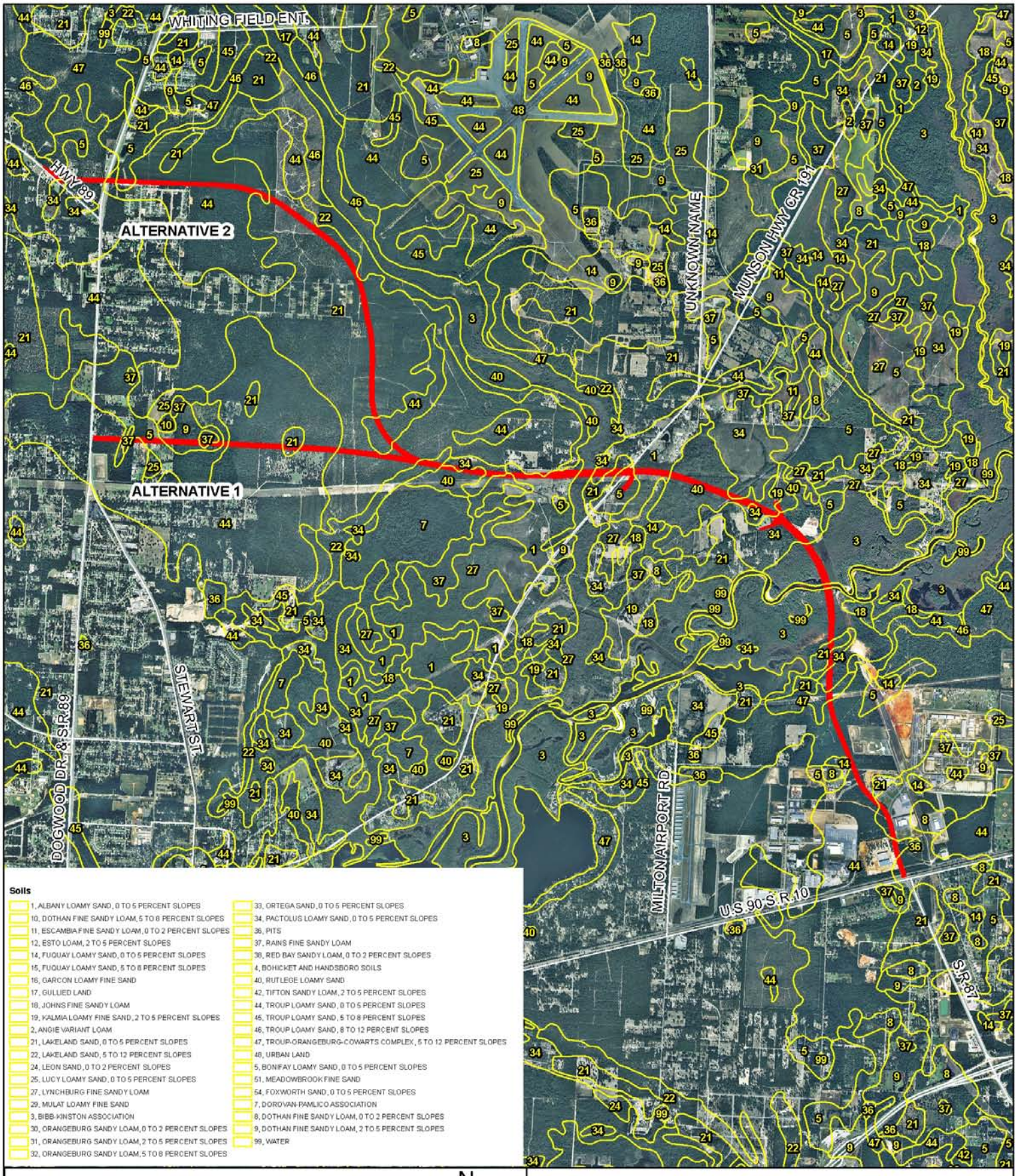


Figure 2.2 NWI Classification Map

SR 87 Connector PD&E

erc Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

Alignments

N

1:48,000
2010 True Color
Aerial

0 2,000 4,000 8,000 12,000 Feet

Figure 3 NCRS Soils

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

Floodplains*

Alignments

*FNAI, 2008

0 2,000 4,000 8,000 12,000 Feet

N

1:48,000

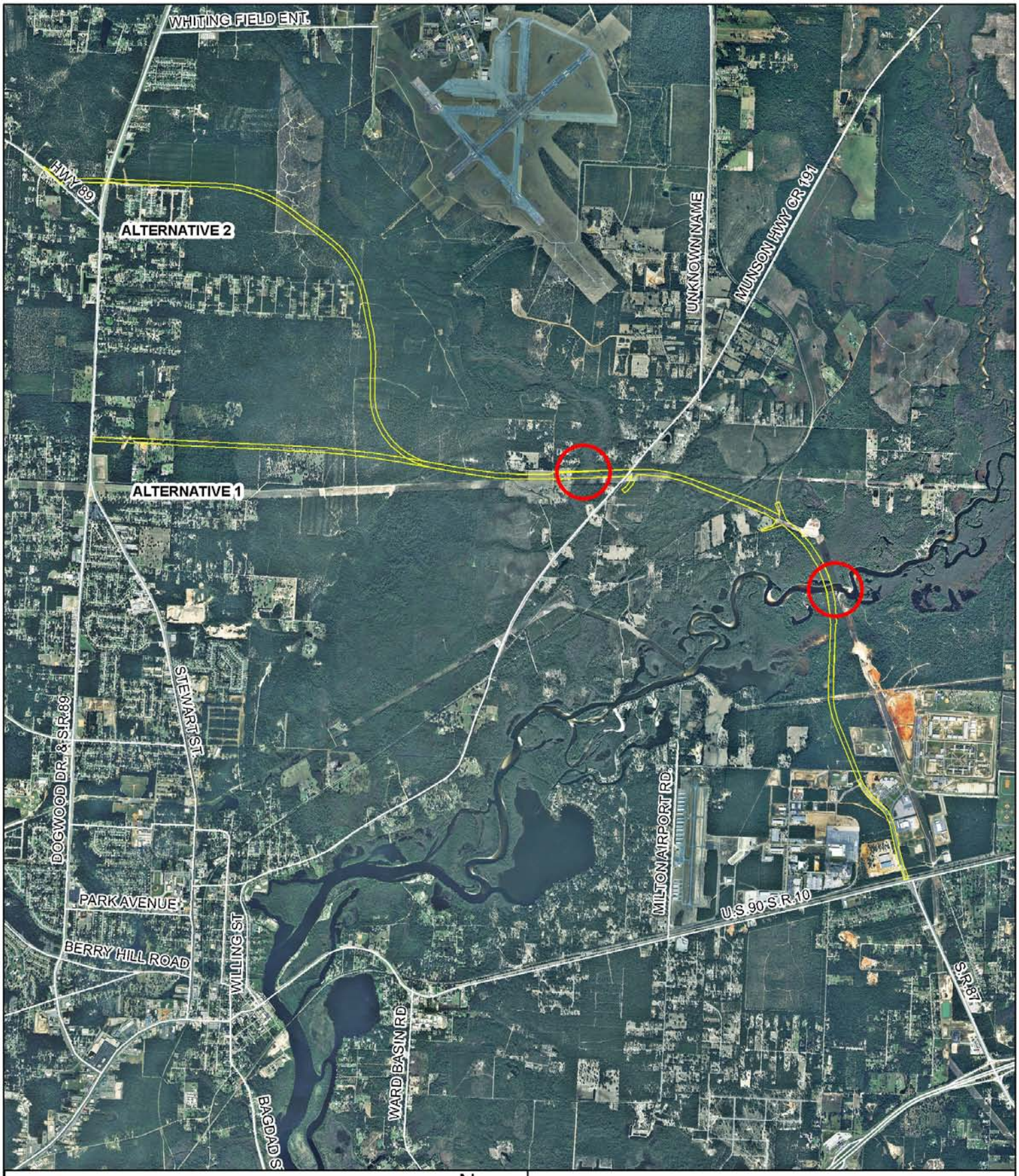
2010 True Color Aerial

Figure 4 Floodplain Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

Alignments

Sovereign Submerged Lands*

* See Appendix E

0 2,000 4,000 8,000 12,000 Feet

N

1:48,000

2010 True Color Aerial

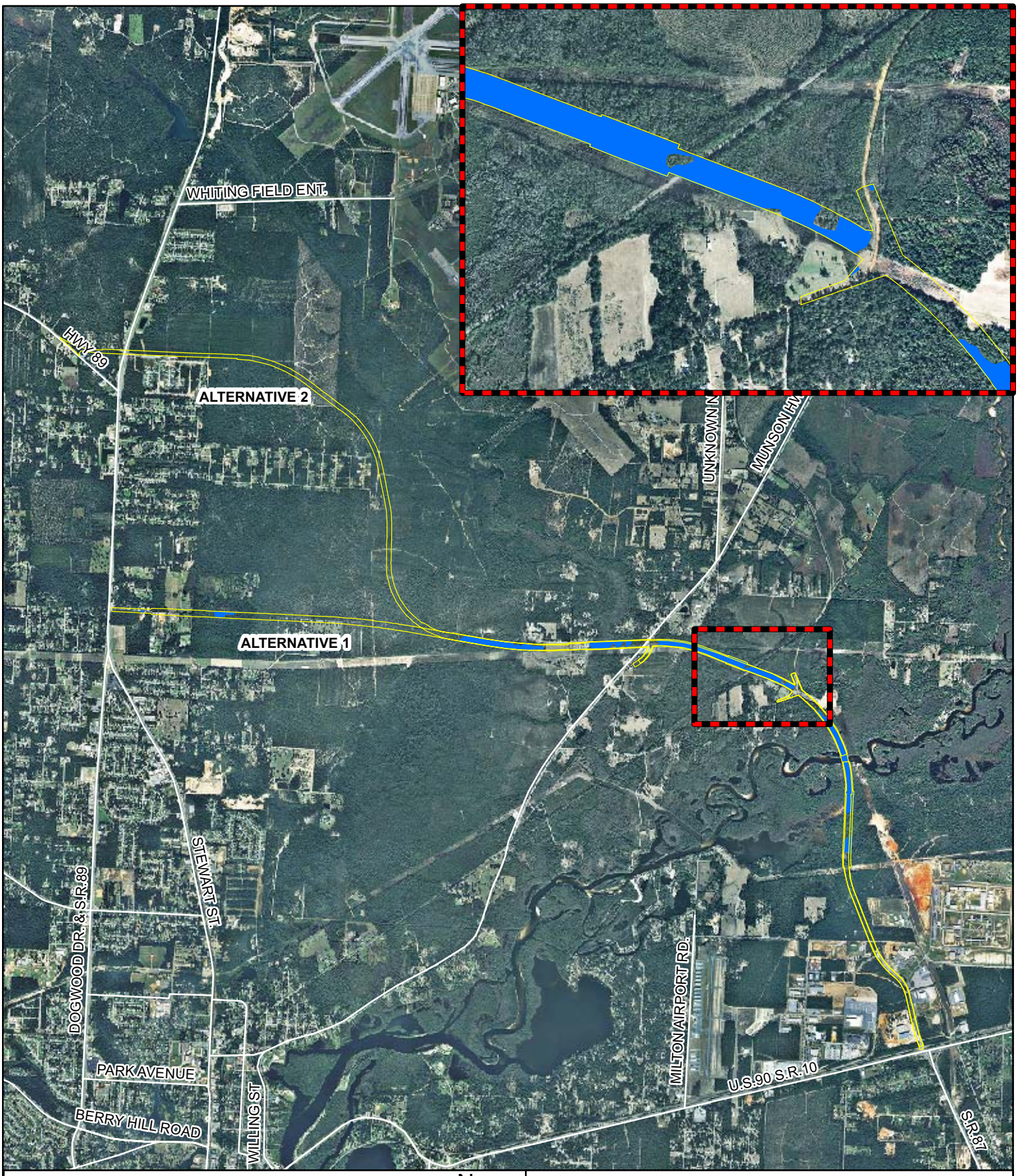
Figure 5 State Lands Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Wetland Delineation Figures 6 – 6.19



Legend:

- Alignments
- ERC Delineated Wetlands

N

1:48,000

2010 True Color Aerial

0 2,000 4,000 8,000 12,000 Feet

Figure 6. Overall Wetland Delineation Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment
- ERC Delineated Wetlands
- Approximate Wetland Delineation Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.1 Wetland Delineation Map 1

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

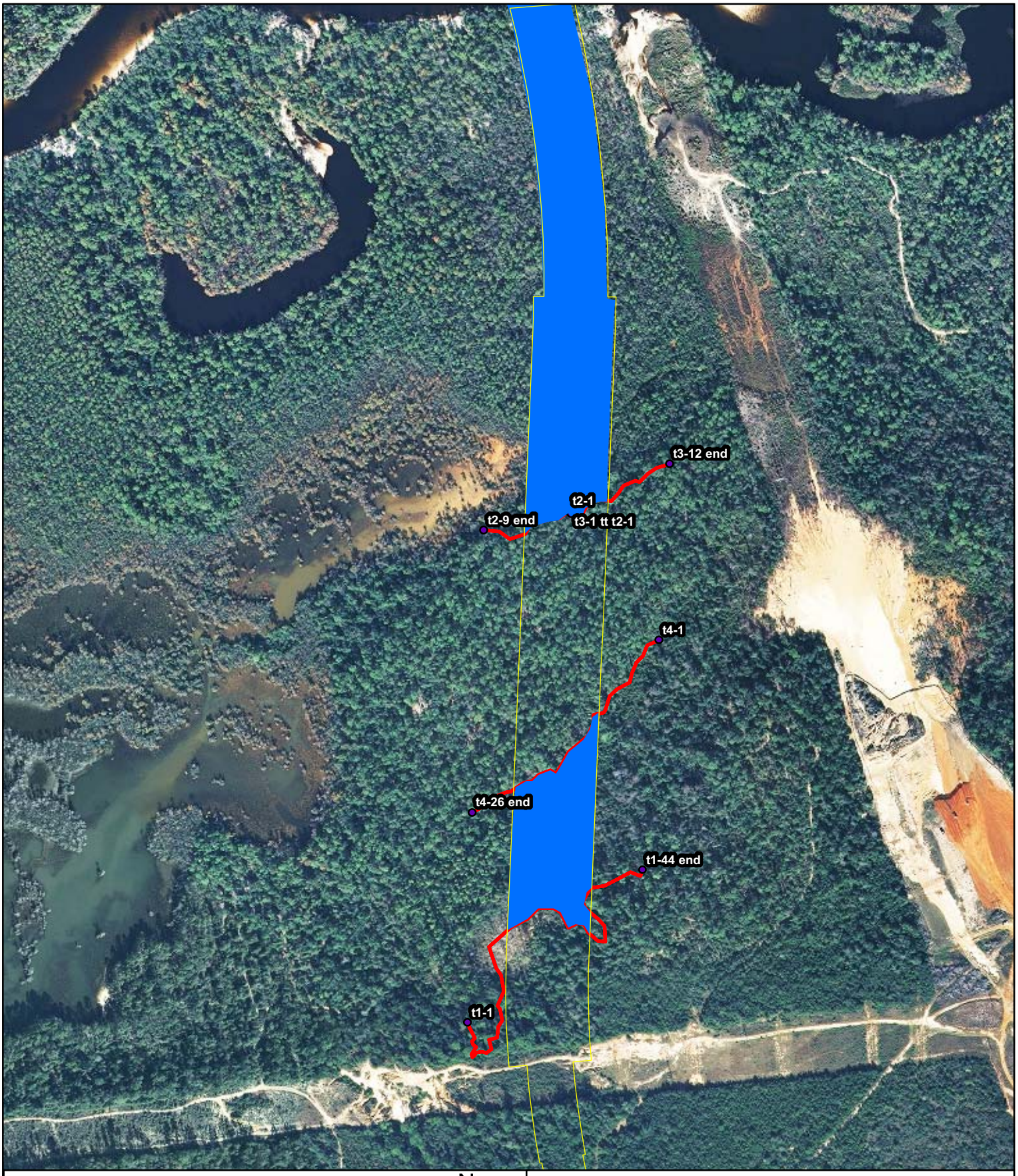
1:4,800
2010 True Color Aerial

Figure 6.2 Wetland Delineation Map 2

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignment
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.3 Wetland Delineation Map 3

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

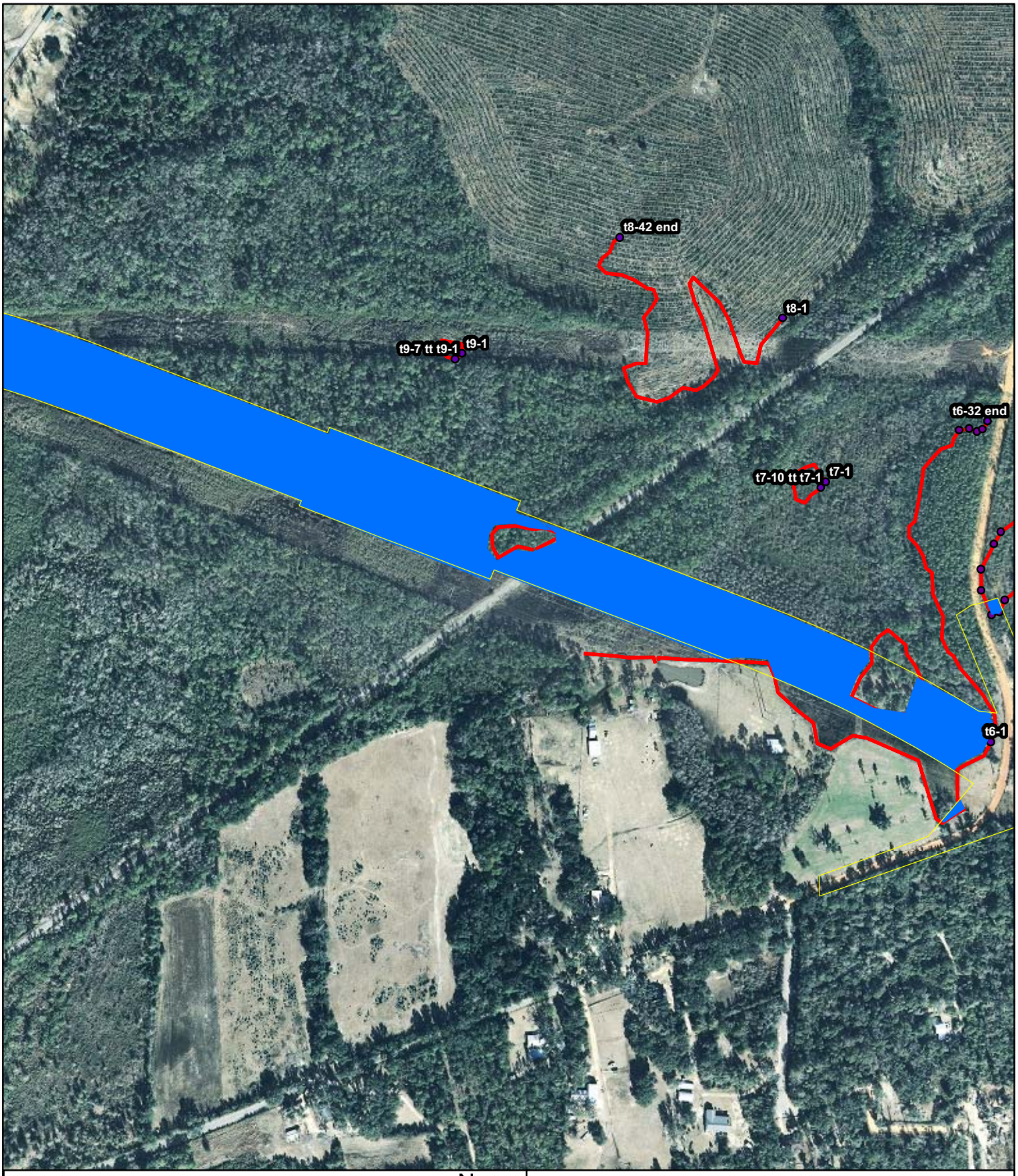
1:4,800
2010 True Color Aerial

Figure 6.4 Wetland Delineation Map 4

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignment
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

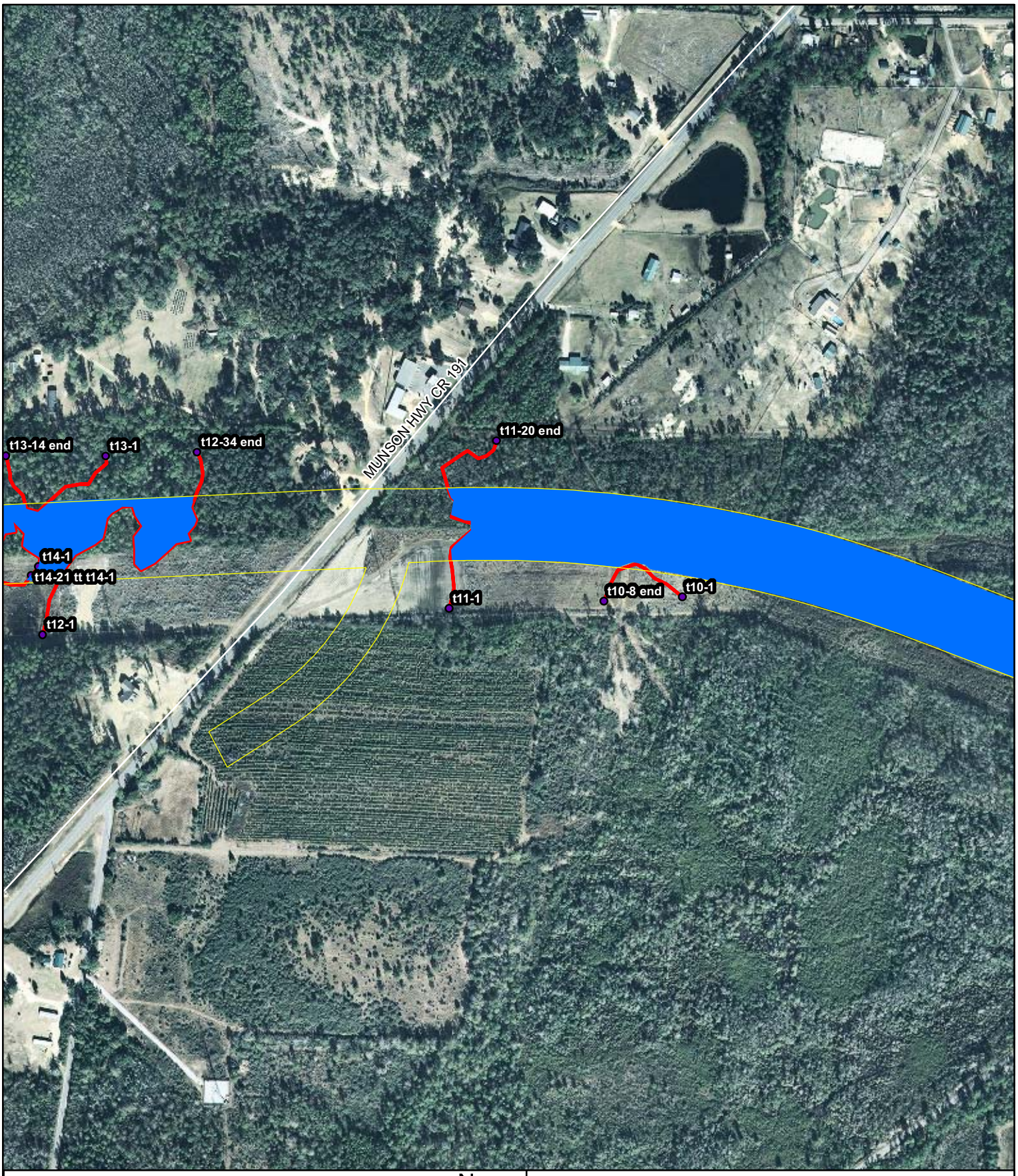
1:4,800
2010 True Color Aerial

Figure 6.5 Wetland Delineation Map 5

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignment
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

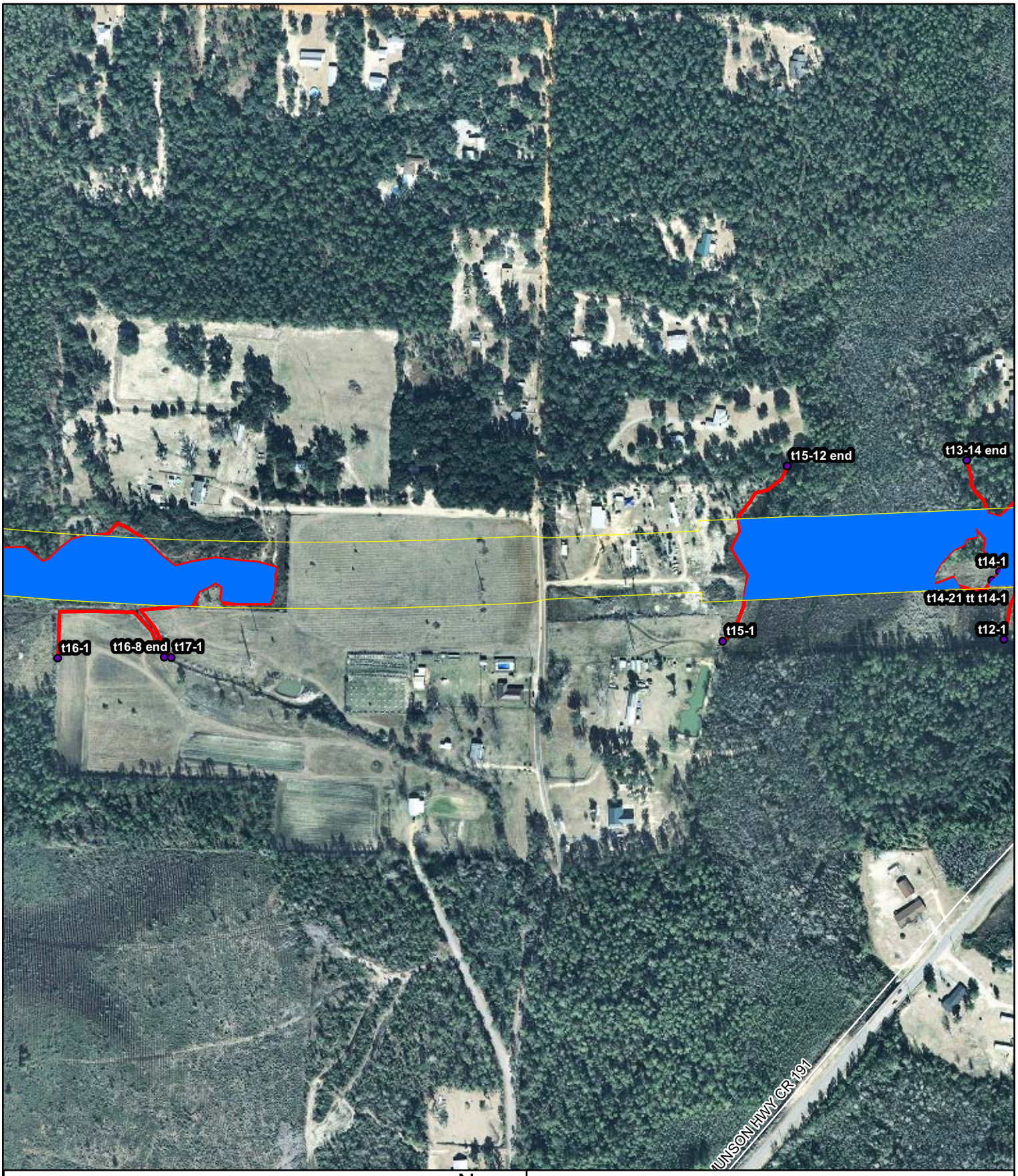
1:4,800
2010 True Color Aerial

Figure 6.6 Wetland Delineation Map 6

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignment
- ERC Delineated Wetlands
- Estimated Wetlands Lines

N

1:4,800
2010 True Color Aerial

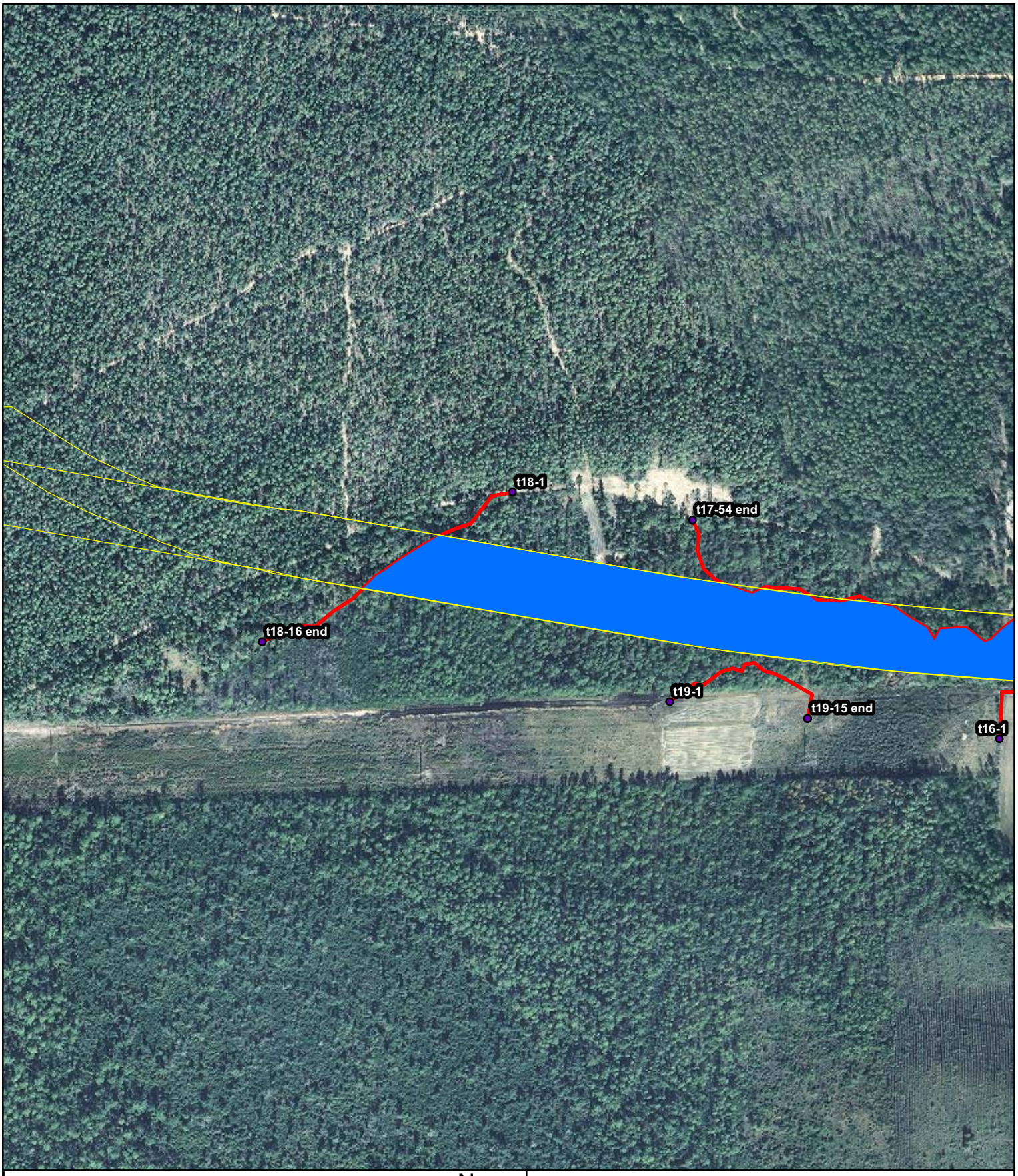
0 200 400 800 1,200 Feet

Figure 6.7 Wetland Delineation Map 7

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignments
- ERC Delineated Wetlands
- Estimated Wetlands Lines

N

1:4,800
2010 True Color Aerial

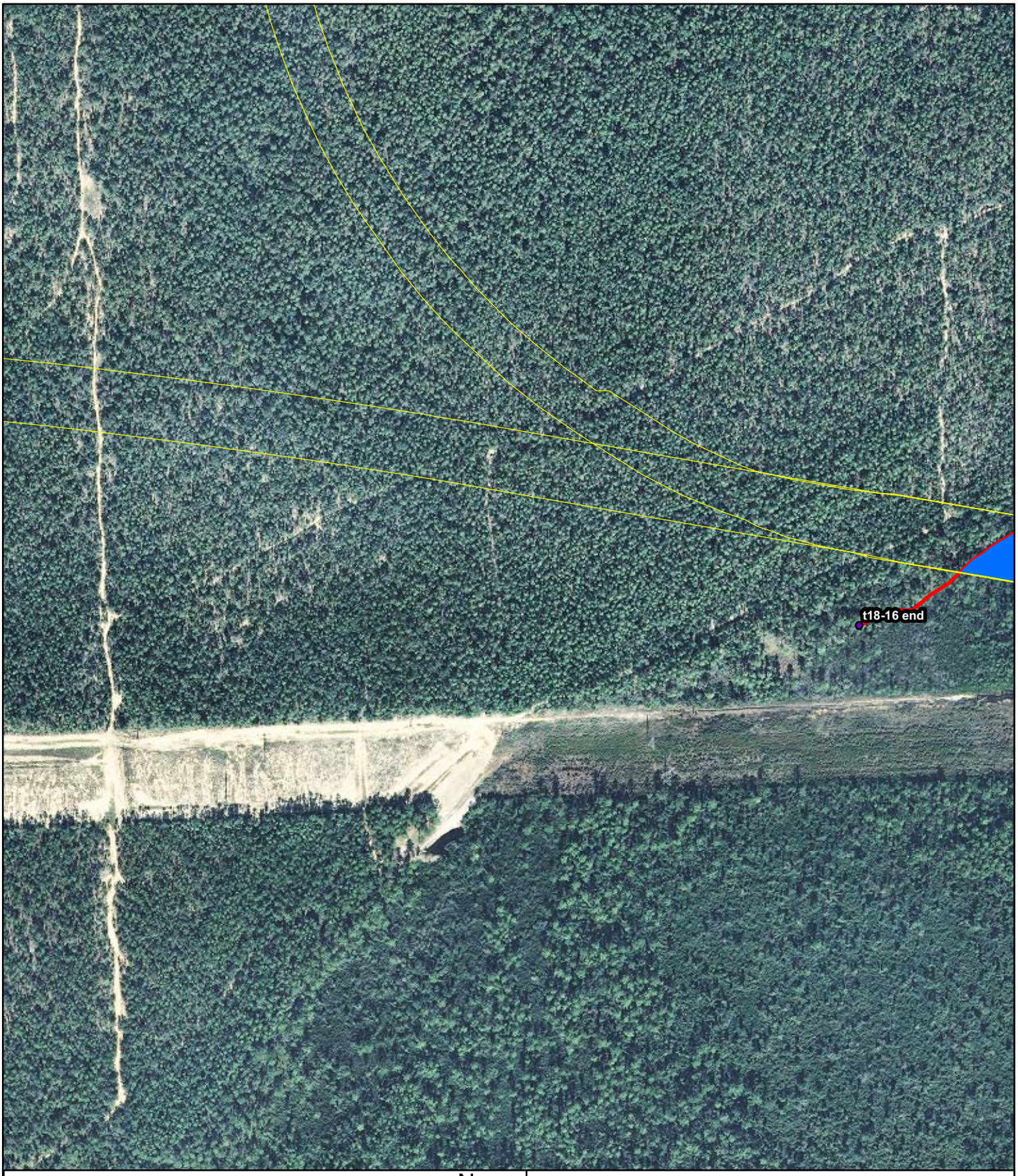
0 200 400 800 1,200 Feet

Figure 6.8 Wetland Delineation Map 8

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignments
- ERC Delineated Wetlands
- Estimated Wetlands Lines

N

1:4,800
2010 True Color Aerial

0 200 400 800 1,200 Feet

Figure 6.9 Wetland Delineation Map 9

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment Alternative 1
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.10 Wetland Delineation Map 10

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment Alternative 1
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

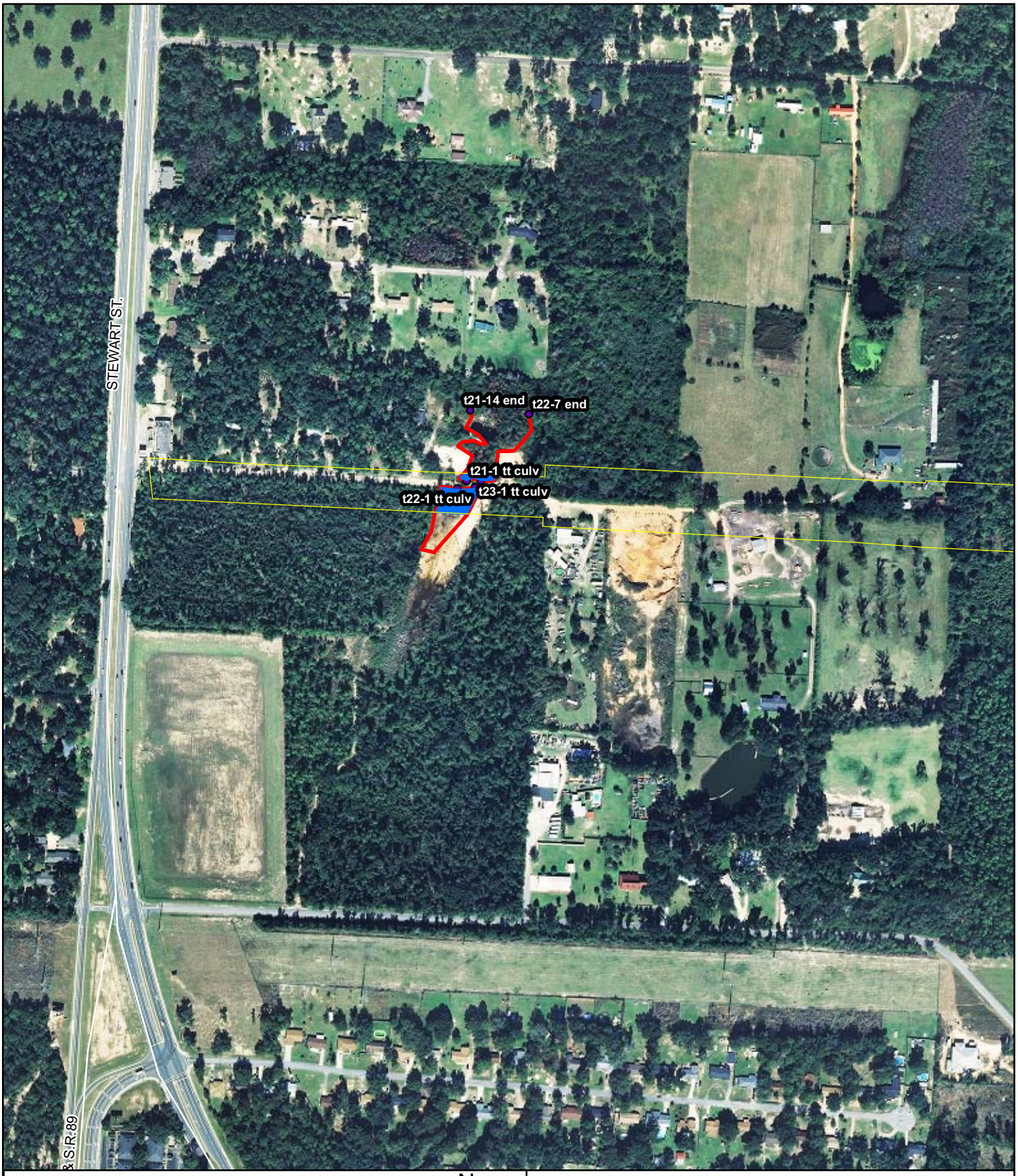
1:4,800
2010 True Color Aerial

Figure 6.11 Wetland Delineation Map 11

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignment Alternative 1
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.12 Wetland Delineation Map 12

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignments
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

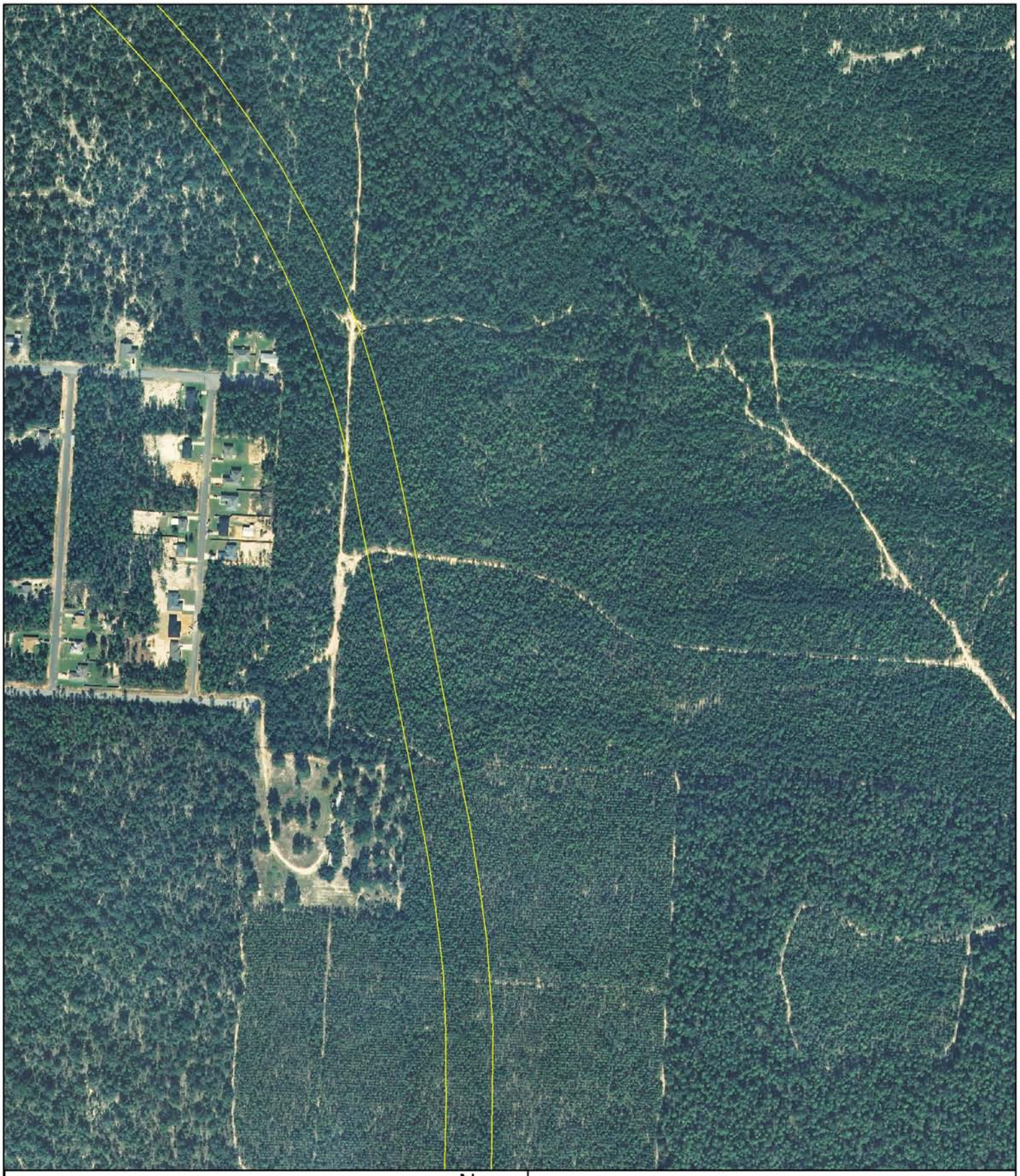
1:4,800
2010 True Color Aerial

Figure 6.13 Wetland Delineation Map 13

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignment Alternative 2
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.14 Wetland Delineation Map 14

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment Alternative 2
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.15 Wetland Delineation Map 15

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment Alternative 2
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.16 Wetland Delineation Map 16

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment Alternative 2
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

1:4,800
2010 True Color Aerial

Figure 6.17 Wetland Delineation Map 17

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignment Alternative 2
- ERC Delineated Wetlands
- Estimated Wetlands Lines

0 200 400 800 1,200 Feet

N

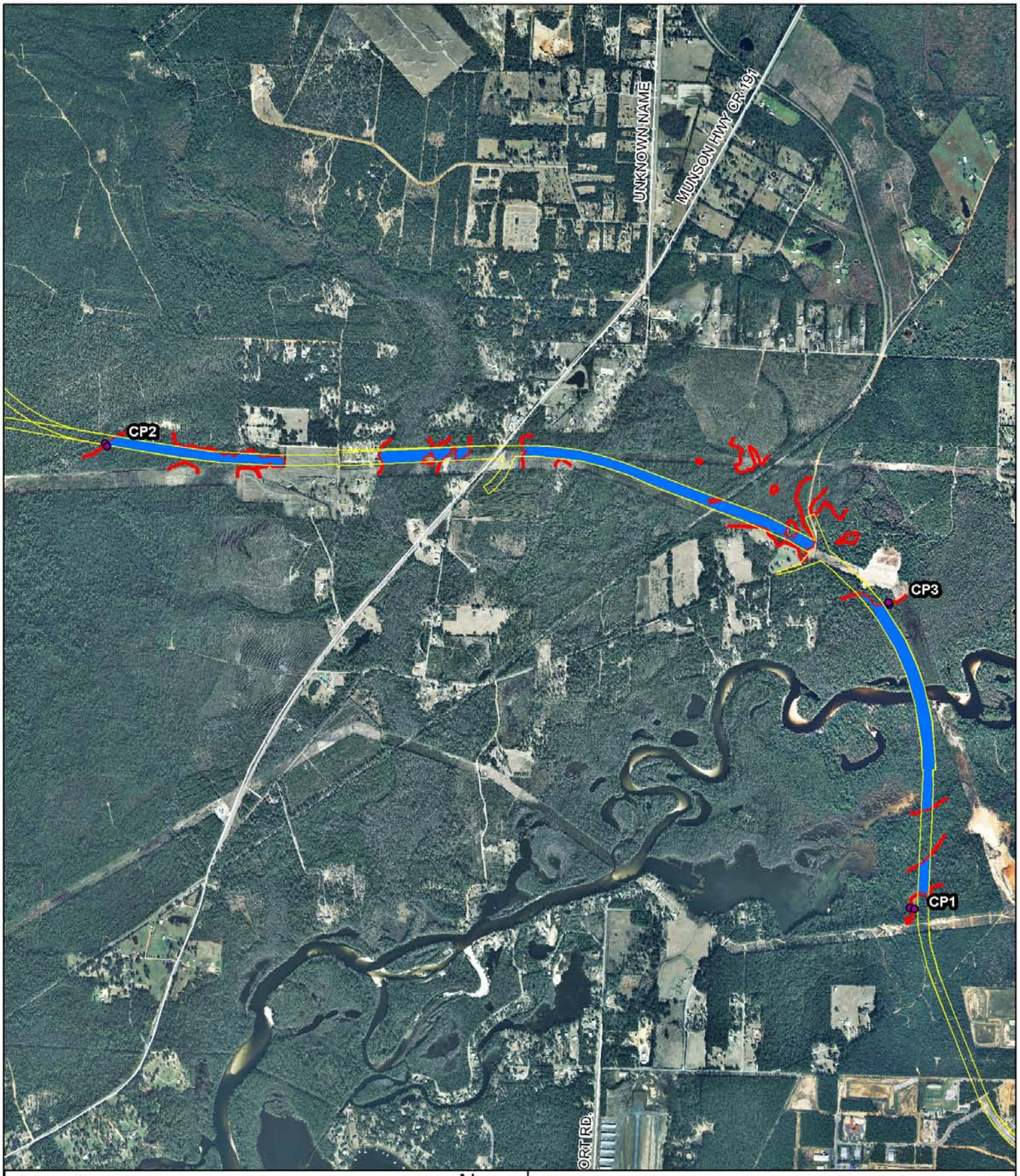
1:4,800
2010 True Color Aerial

Figure 6.18 Wetland Delineation Map 18

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- USACOE Points
- Alignments
- ERC Delineated Wetlands

N

1:22,800
2010 True Color
Aerial

0 950 1,900 3,800 5,700 Feet

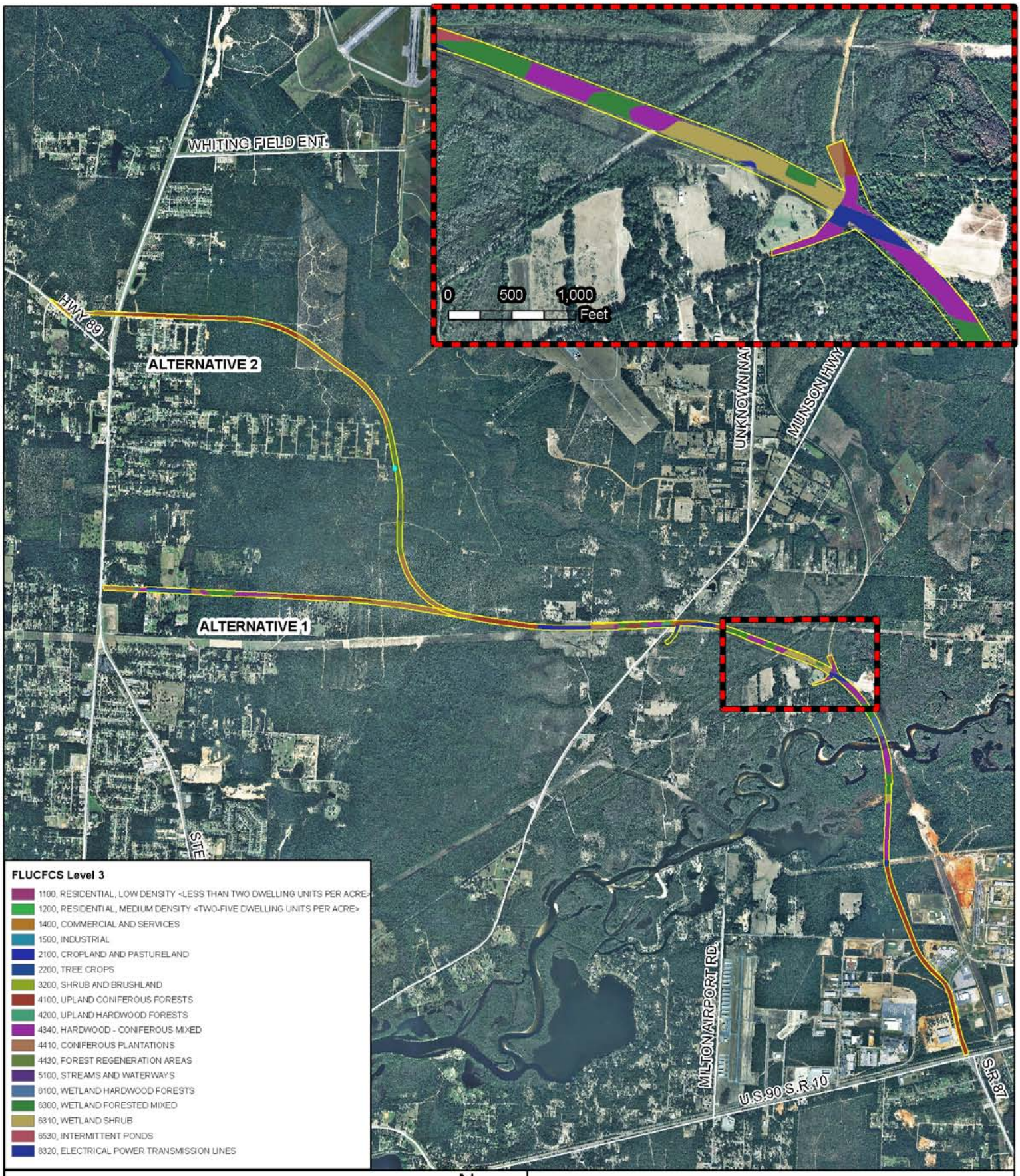
Figure 6.19 USACOE Data Sheet Location Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

dv 9.4.12
ERC# 09-143

Wetland Classification / Assessment Figures 7-9



Legend:

Alignments

N

1:45,159
2010 True Color Aerial

0 2,000 4,000 8,000 12,000 Feet

Figure 7 FLUCFCS Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

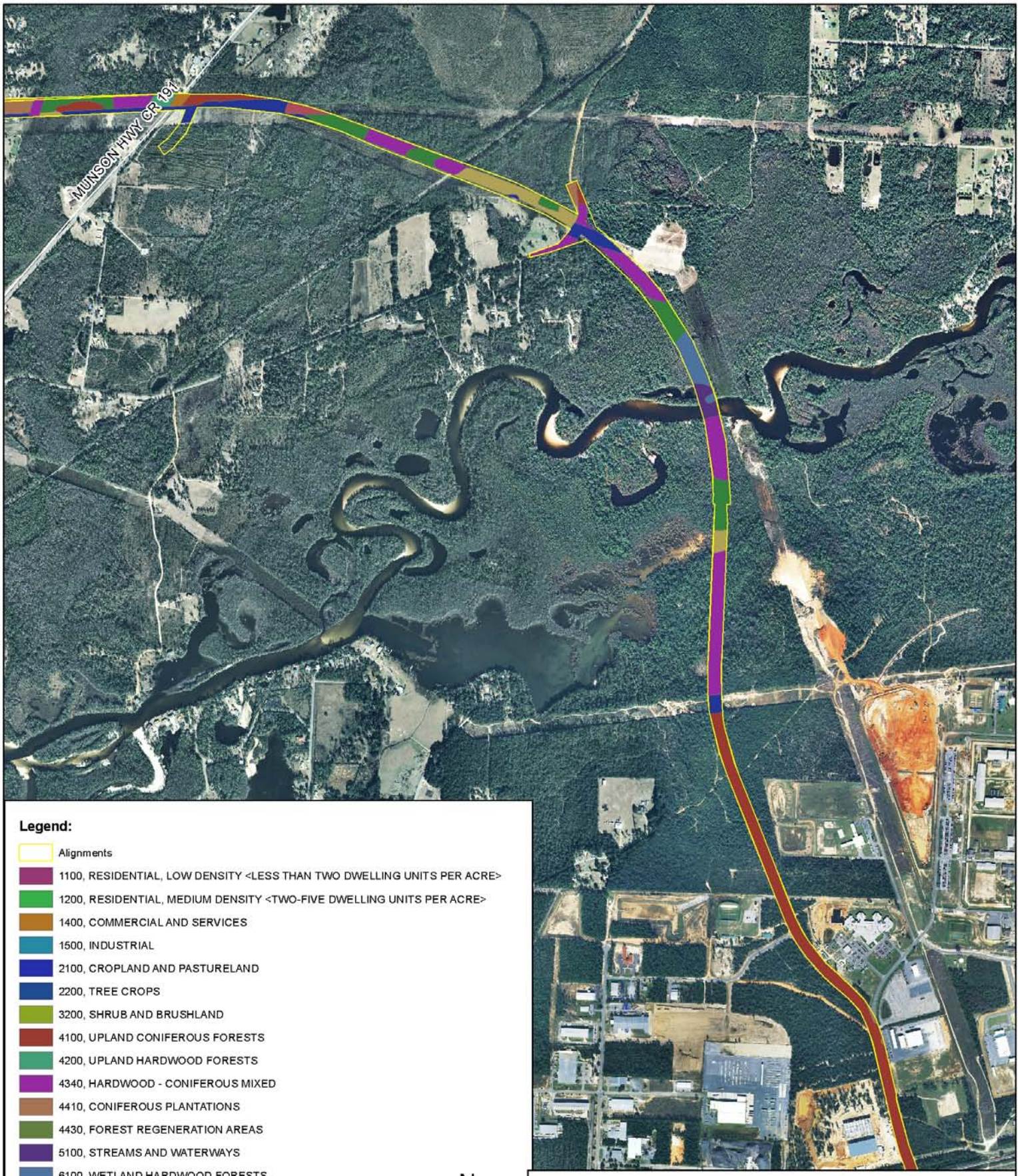
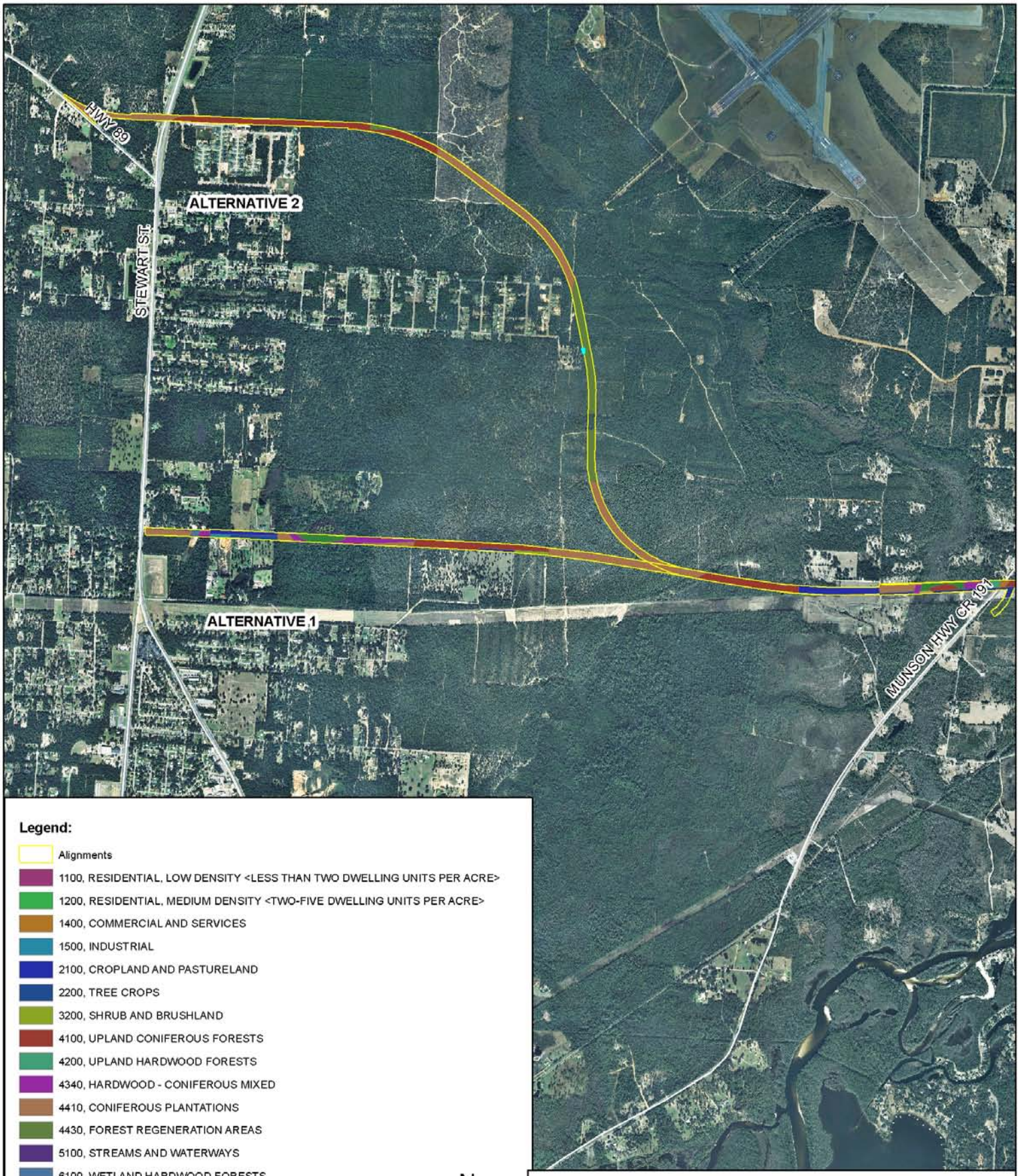


Figure 7.1 FLUCFCS Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

- Alignments
- 1100, RESIDENTIAL, LOW DENSITY <LESS THAN TWO DWELLING UNITS PER ACRE>
- 1200, RESIDENTIAL, MEDIUM DENSITY <TWO-FIVE DWELLING UNITS PER ACRE>
- 1400, COMMERCIAL AND SERVICES
- 1500, INDUSTRIAL
- 2100, CROPLAND AND PASTURELAND
- 2200, TREE CROPS
- 3200, SHRUB AND BRUSHLAND
- 4100, UPLAND CONIFEROUS FORESTS
- 4200, UPLAND HARDWOOD FORESTS
- 4340, HARDWOOD - CONIFEROUS MIXED
- 4410, CONIFEROUS PLANTATIONS
- 4430, FOREST REGENERATION AREAS
- 5100, STREAMS AND WATERWAYS
- 6100, WETLAND HARDWOOD FORESTS
- 6300, WETLAND FORESTED MIXED
- 6310, WETLAND SHRUB
- 6530, INTERMITTENT PONDS
- 8320, ELECTRICAL POWER TRANSMISSION LINES

N

1:30,000
2010 True Color Aerial

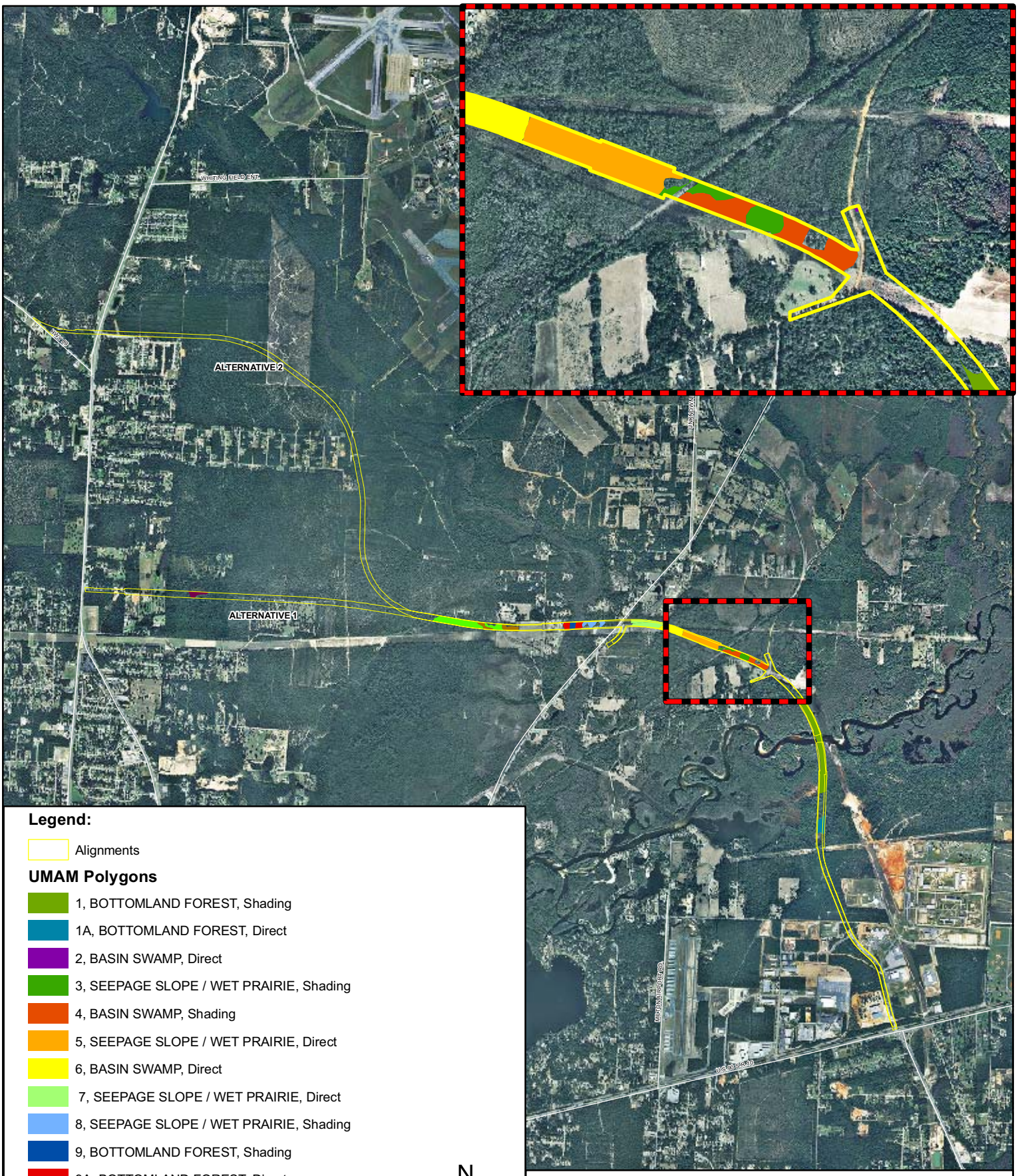
0 750 1,500 3,000 4,500 Feet

Figure 7.2 FLUCFCS Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

Alignments

UMAM Polygons

- 1, BOTTOMLAND FOREST, Shading
- 1A, BOTTOMLAND FOREST, Direct
- 2, BASIN SWAMP, Direct
- 3, SEEPAGE SLOPE / WET PRAIRIE, Shading
- 4, BASIN SWAMP, Shading
- 5, SEEPAGE SLOPE / WET PRAIRIE, Direct
- 6, BASIN SWAMP, Direct
- 7, SEEPAGE SLOPE / WET PRAIRIE, Direct
- 8, SEEPAGE SLOPE / WET PRAIRIE, Shading
- 9, BOTTOMLAND FOREST, Shading
- 9A, BOTTOMLAND FOREST, Direct
- 10, BASIN SWAMP, Direct
- 11, SEEPAGE SLOPE / WET PRAIRIE, Direct
- 12, DOME SWAMP, Direct
- 13, SEEPAGE SLOPE / WET PRAIRIE, Direct

N

1:48,000

2010 True Color Aerial

0 2,000 4,000 8,000 12,000 Feet

Figure 8 Overall UMAM Polygon Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

Alignments

UMAM Polygons

1, BOTTOMLAND FOREST, Shading

1A, BOTTOMLAND FOREST, Direct

0 650 1,300 2,600 3,900 Feet

N

1:15,600

2010 True Color Aerial

Figure 8.1 UMAM Polygons 1A & 1

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

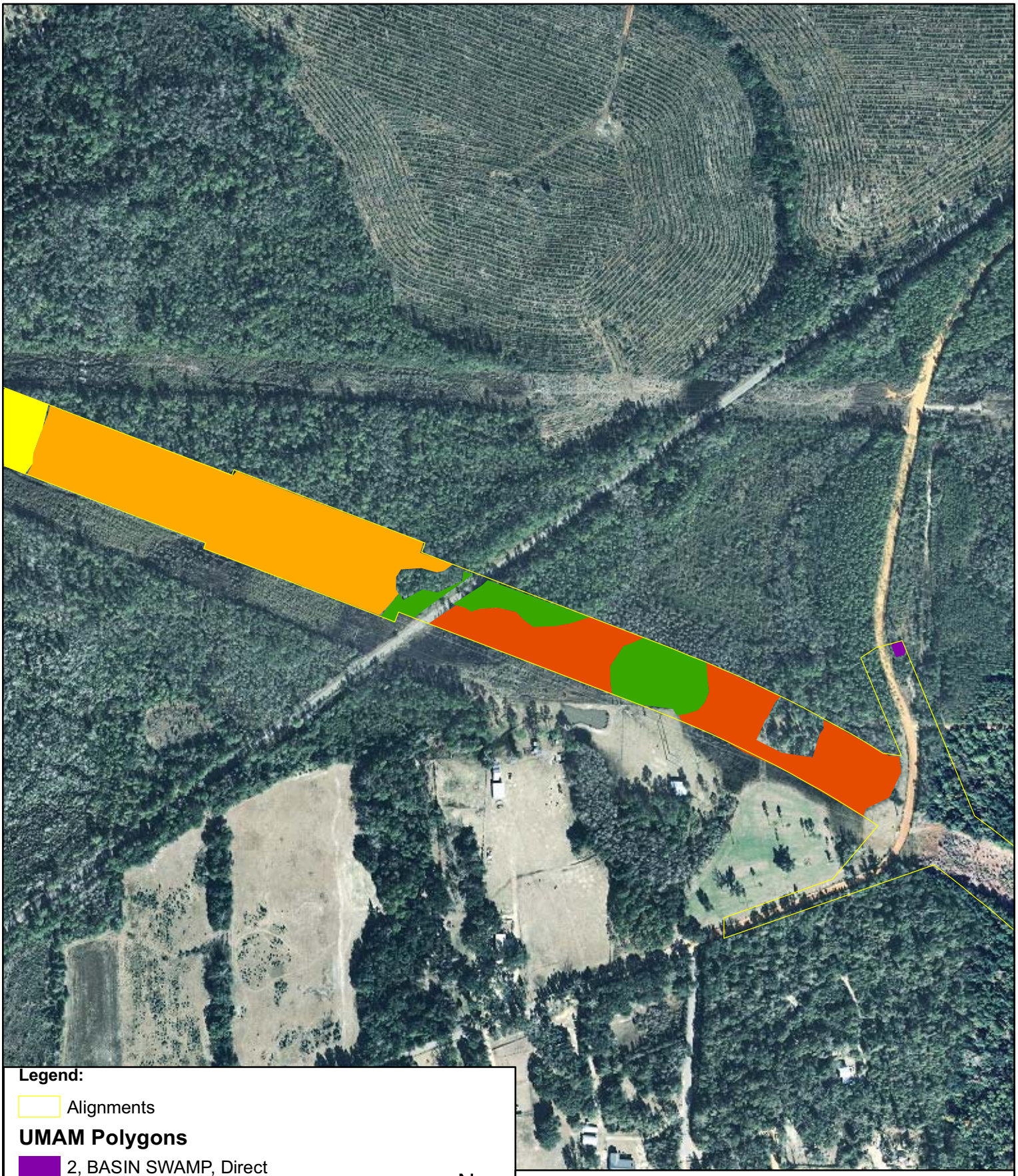
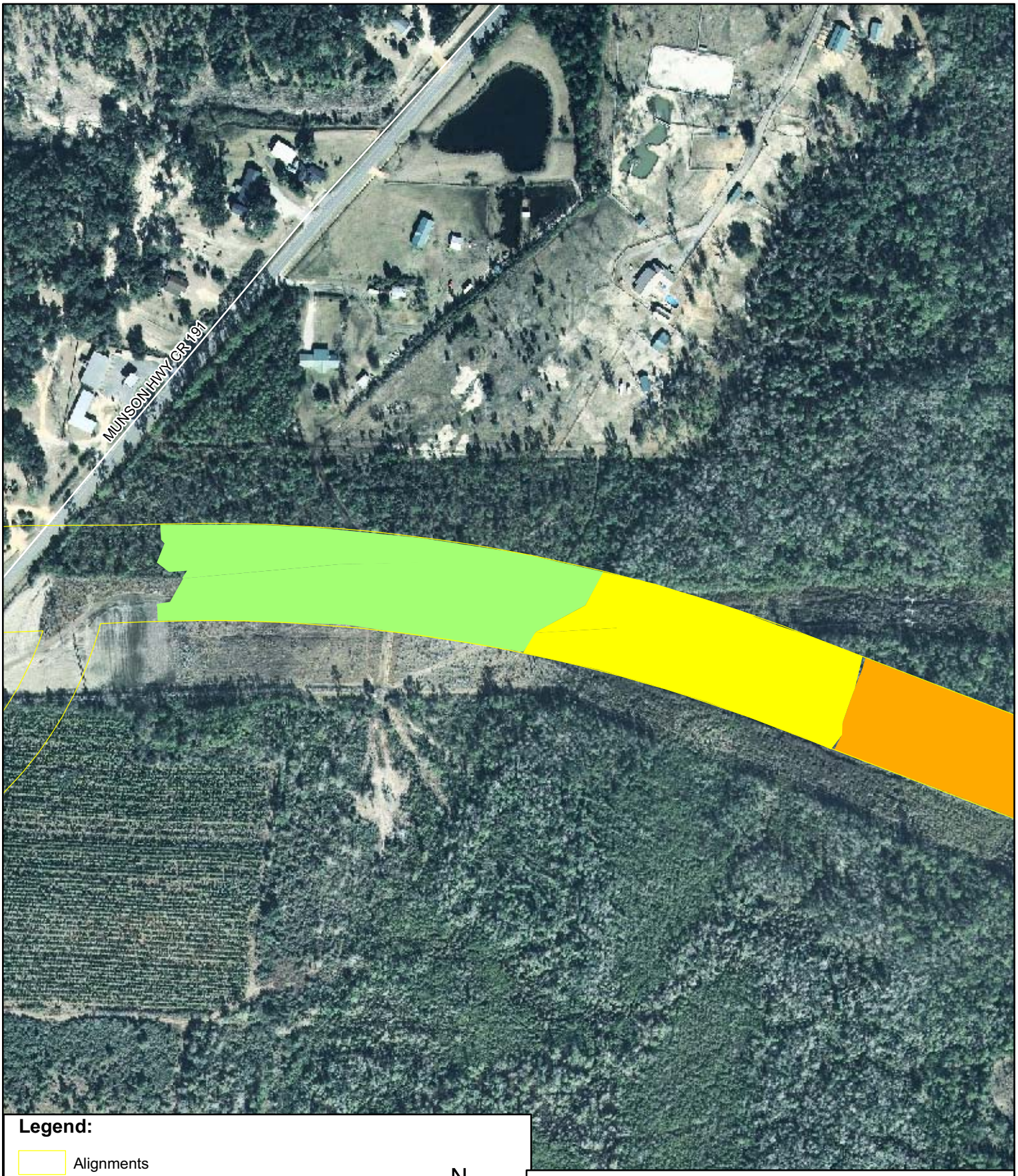


Figure 8.2 UMAM Polygons 2, 3, 4, & 5

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

dv 9.4.12
ERC# 09-143



Legend:

Alignments

UMAM Polygons

5, SEEPAGE SLOPE / WET PRAIRIE, Direct

6, BASIN SWAMP, Direct

7, SEEPAGE SLOPE / WET PRAIRIE, Direct

0 150 300 600 900 Feet

N

1:3,600

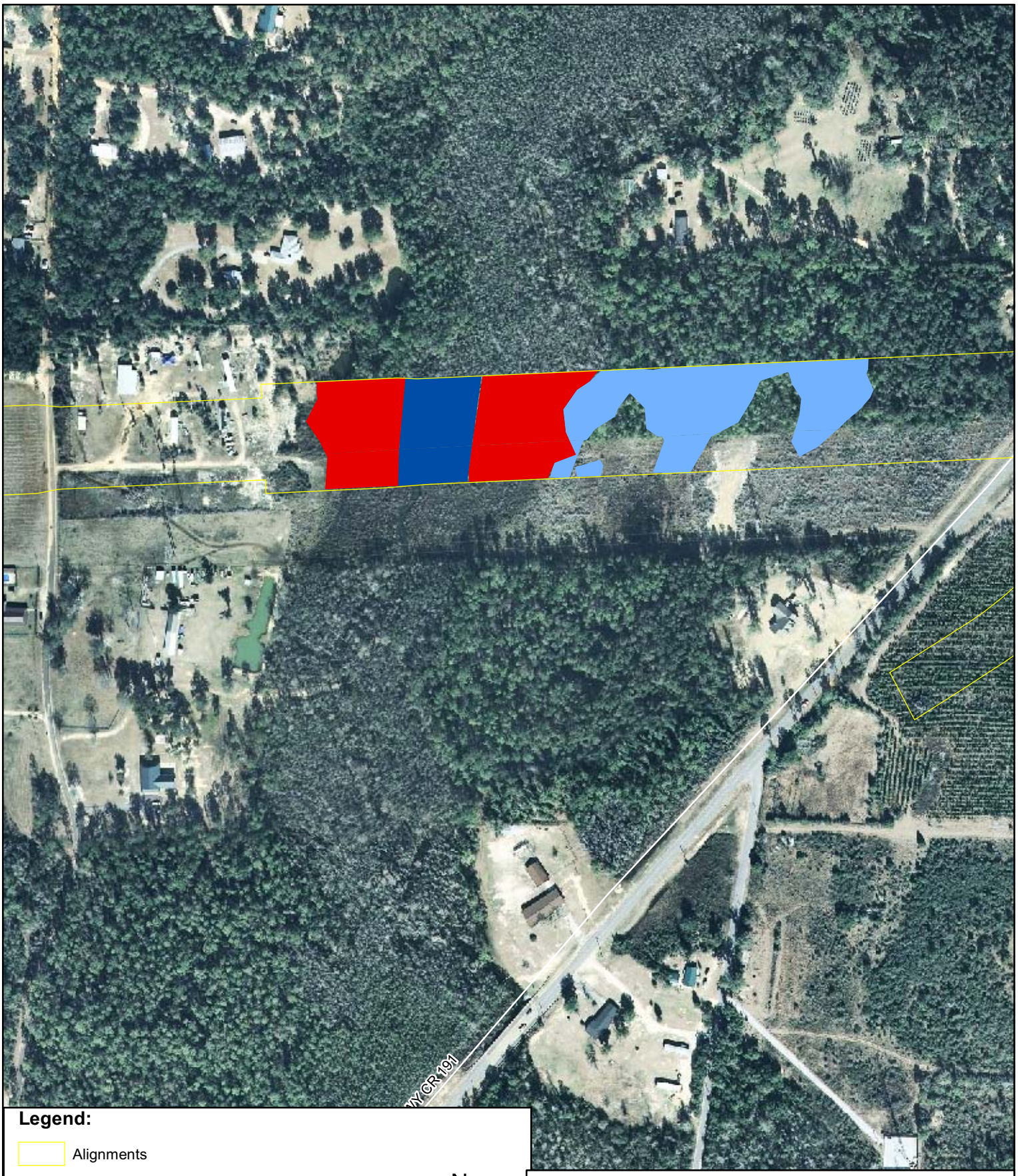
2010 True Color Aerial

Figure 8.3 UMAM Polygons 5, 6, & 7

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

Alignments

UMAM Polygons

8, SEEPAGE SLOPE / WET PRAIRIE, Shading

9, BOTTOMLAND FOREST, Shading

9A, BOTTOMLAND FOREST, Direct

N

1:3,600

2010 True Color Aerial

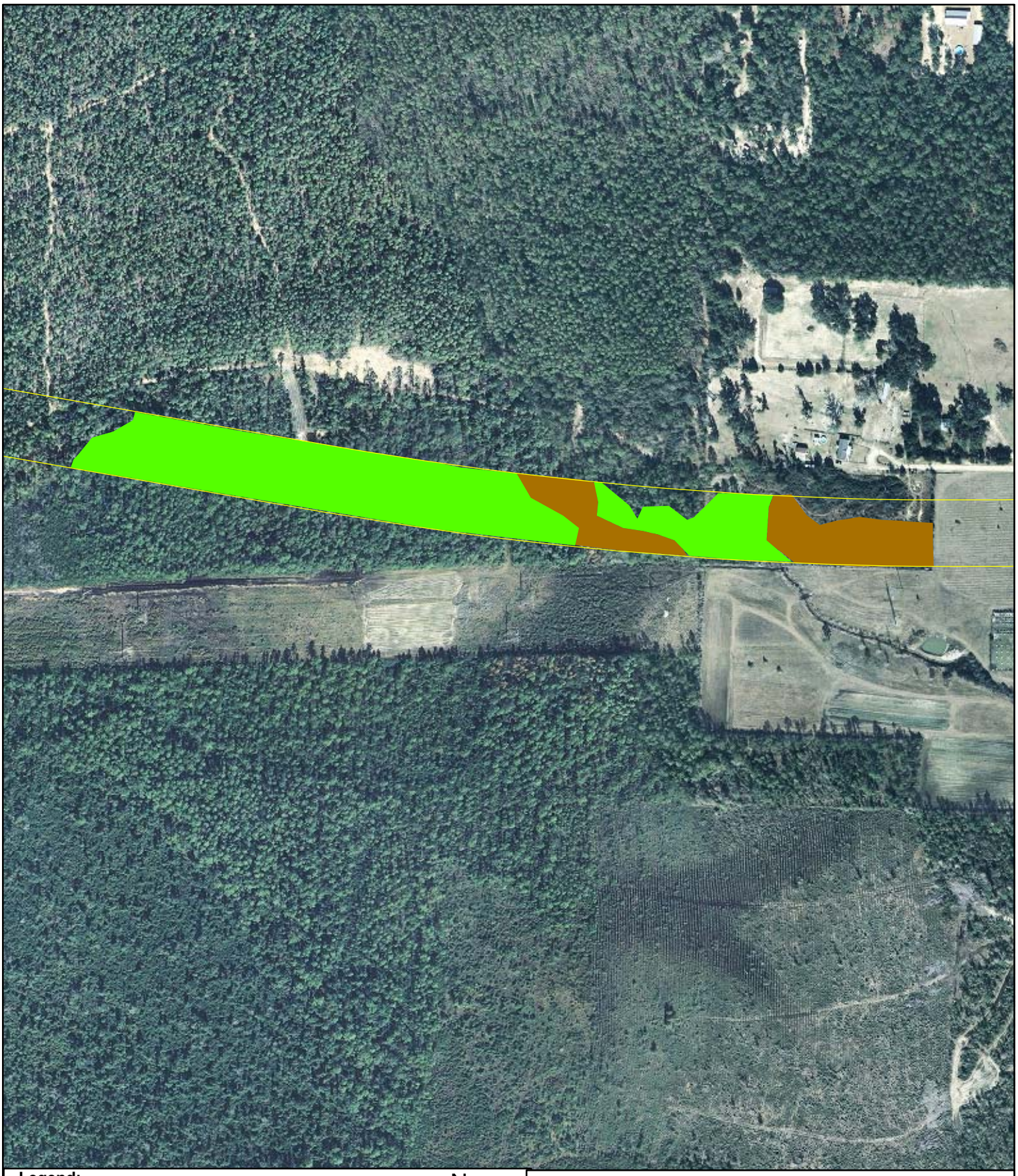
0 150 300 600 900 Feet

Figure 8.4 UMAM Polygons 8, 9, & 9A

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143



Legend:

Alignments

UMAM Polygons

10, BASIN SWAMP, Direct

11, SEEPAGE SLOPE / WET PRAIRIE, Direct

0 200 400 800 1,200 Feet

N

1:4,800

2010 True Color Aerial

Figure 8.5 UMAM Polygons 10 & 11

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

Alignment Alternative 1

UMAM Polygons

12, DOME SWAMP, Direct

N

1:3,600

2010 True Color Aerial

0 150 300 600 900 Feet

Figure 8.6 UMAM Polygon 12

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

Alignment Alternative 1

UMAM Polygons

13, SEEPAGE SLOPE / WET PRAIRIE, Direct

0 50 100 200 300 Feet

N

1:1,200

2010 True Color Aerial

Figure 8.7 UMAM Polygon 13

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Legend:

- Alignments
- 12, Indirect and Cumulative Adj. Direct
- 13, Indirect and Cumulative Impacts Adj. Shading
- ERC Delineated Wetlands

N

1:12,000
2010 True Color Aerial

0 500 1,000 2,000 3,000 Feet

Figure 8.8 UMAM Indirect & Cumulative Polygons Map 1

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

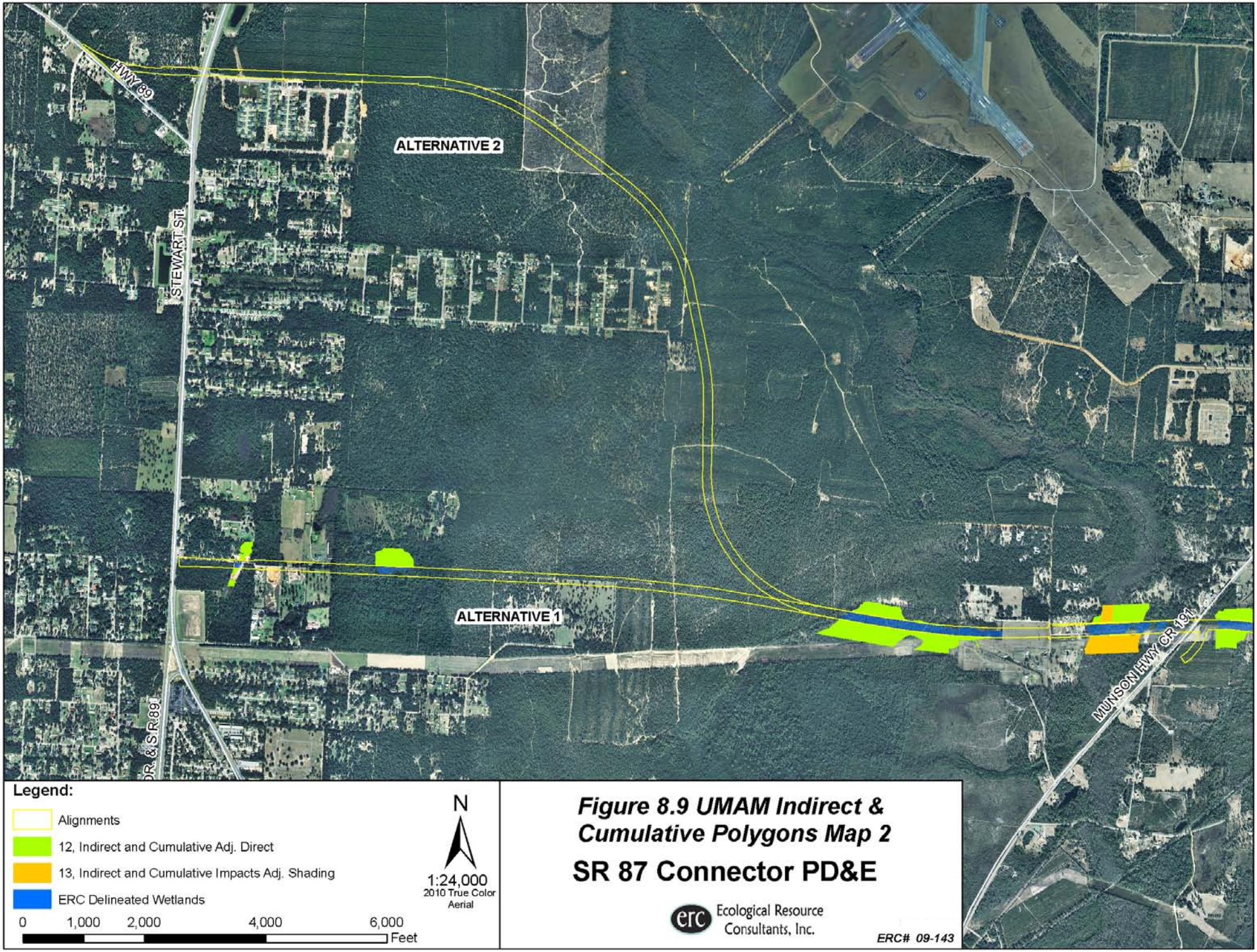


Figure 8.9 UMAM Indirect & Cumulative Polygons Map 2

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

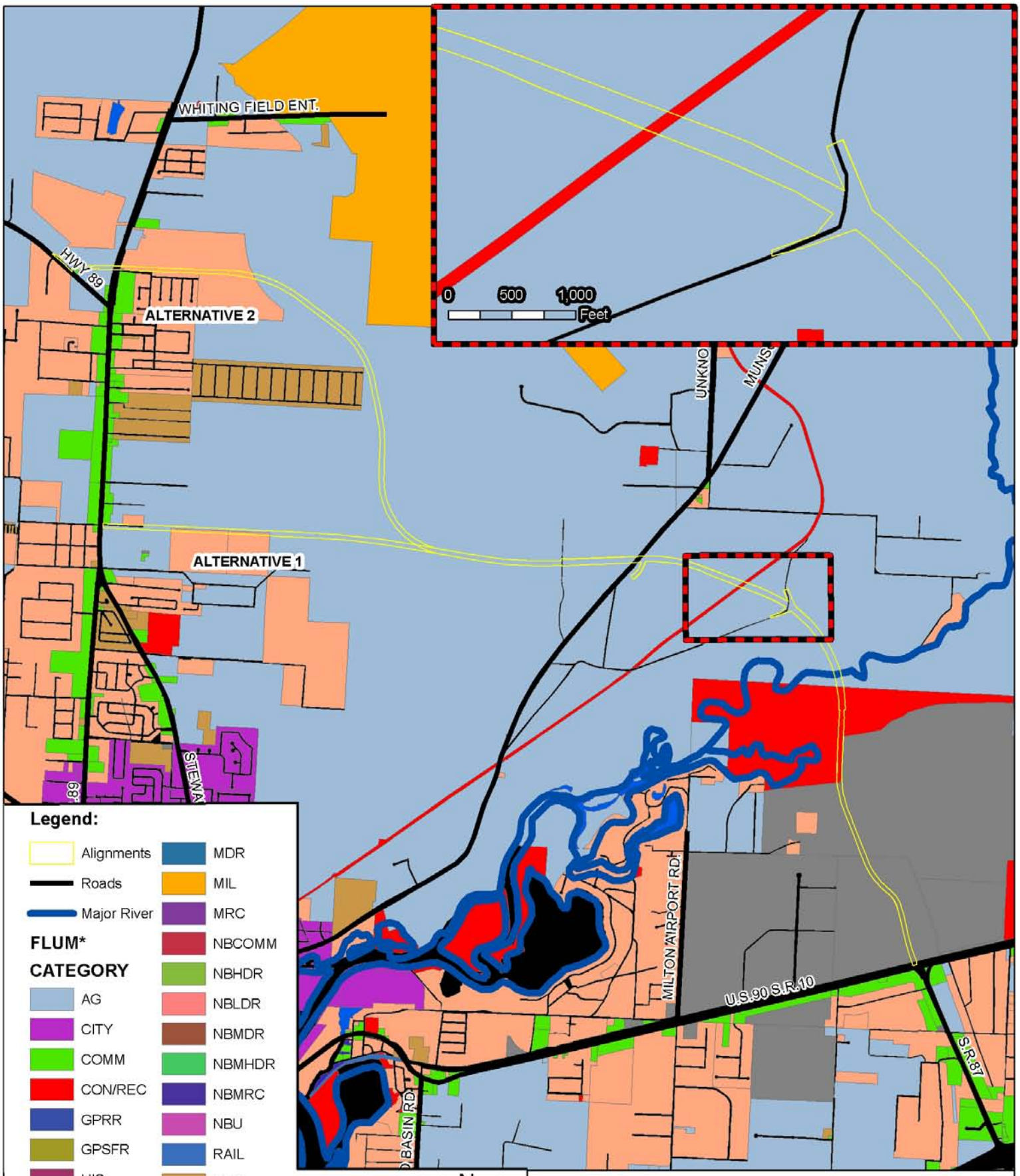


Figure 9 Future Land Use Map

SR 87 Connector PD&E

Ecological Resource Consultants, Inc.

ERC# 09-143

Appendix A

USACOE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SR 87 Connector PD&E City/County: Santa Rosa Sampling Date: Sep 13, 2011

Applicant/Owner: FDOT State: Florida Sampling Point: CP1-A

Investigator(s): Todd Campbell Section, Township, Range:

Landform (hillslope, terrace, etc.) Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR P Lat: 30°39'4.7" N Long: 86°58'51.1" W Datum: NAD 83

Soil Map Unit Name: Bibb/Kriston Association NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- X Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	2 inches
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	Surface

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point CP1-A

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Magnolia virginiana (Magnolia,sweetbay)	25	Y	FACW
2. Nyssa biflora (Tupelo,swamp)	25	Y	OBL
3. Pinus elliottii (Pine,slash)	2		FACW
4. Quercus nigra (Oak,water)	2		FAC
5.			
6.			
	54	= Total Cover	
50 % of total cover: 27	20 % of total cover: 10.8		

Sapling Stratum (Plot size:)			
1. Magnolia virginiana (Magnolia,sweetbay)	10	Y	FACW
2. Nyssa biflora (Tupelo,swamp)	10	Y	OBL
3. Persea palustris (Bay, swamp)	2		FACW
4.			
5.			
6.			
	22	= Total Cover	
50 % of total cover: 11	20 % of total cover: 4.4		

Shrub Stratum (Plot size:)			
1. Ilex coriacea (Holly,bay-gall)	10	Y	FACW
2. Myrica cerifera (Bayberry,southern)	10	Y	FAC
3. Vaccinium corymbosum (Blueberry,highbush)	7	Y	FACW
4. Acer rubrum (Maple,red)	2		FAC
5. Ilex vomitoria (Yaupon)	2		FAC
6.			
	31	= Total Cover	
50 % of total cover: 15.5	20 % of total cover: 6.2		

Herb Stratum (Plot size:)			
1. Osmunda cinnamomea (Fern,cinnamon)	2	Y	FACW
2. Woodwardia areolata (Chainfern,netted)	1	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	3	= Total Cover	
50 % of total cover: 1.5	20 % of total cover: 0.6		

Woody Vine Stratum (Plot size:)			
1. Vitis rotundifolia (Grape,muscadine)	7	Y	FAC
2. Smilax laurifolia (Greenbrier,laurel-leaf)	2	Y	FACW
3.			
4.			
5.			
	9	= Total Cover	
50 % of total cover: 4.5	20 % of total cover: 1.8		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 11 (A)

Total Number of Dominant Species Across All Strata: 11 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	X 2 =
FAC species	X 3 =
FACU species	X 4 =
UPL species	X 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: CP1-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR6/6				N/A	N/A	Sandy	coarse sand w/ small fragments from upslope deposition
4-6	10YR5/6				N/A	N/A	Sandy	
6-8	10YR6/6				N/A	N/A	Sandy	
8-12+	10YR4/1				N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- X Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Stripping begins below 6 inches due to depositional sediment from adjacent sandhill. Seepage stream wetland by definition.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SR 87 Connector PD&E City/County: Santa Rosa Sampling Date: Sep 13, 2011

Applicant/Owner: FDOT State: Florida Sampling Point: CP1-B

Investigator(s): Todd Campbell/Tim Stuhr Section, Township, Range: _____

Landform (hillslope, terrace, etc.) _____ Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR P Lat: 30°39'4.6" N Long: 86°58'50.4" W Datum: NAD 83

Soil Map Unit Name: Bibb-Kinston Association NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland?	Yes ____ No ____
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	_____
Water Table Present?	Yes ___ No X	Depth (inches):	_____
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point CP1-B

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Magnolia grandiflora (Magnolia,large-flower)	15	Y	FAC
2. Quercus hemispherica (Oak, laurel)	15	Y	UPL
3. Oxydendrum arboreum (Sourwood)	10		NI
4. Ilex opaca (Holly,american)	7		FAC
5. Diospyros virginiana (Persimmon,common)	5		FAC
6. Pinus elliottii (Pine,slash)	5		FACW
	57	= Total Cover	
50 % of total cover: 28.5	20 % of total cover: 11.4		

Sapling Stratum (Plot size:_____)			
1. Quercus hemispherica (Oak, laurel)	10	Y	UPL
2. Ilex opaca (Holly,american)	5	Y	FAC
3. Magnolia grandiflora (Magnolia,large-flower)	5	Y	FAC
4. Fagus grandifolia (Beech)	2		FAC
5.			
6.			
	22	= Total Cover	
50 % of total cover: 11	20 % of total cover: 4.4		

Shrub Stratum (Plot size:_____)			
1. Ilex glabra (Ink-berry)	40	Y	FACW
2. Ilex vomitoria (Yaupon)	15	Y	FAC
3. Vaccinium elliottii (Blueberry,elliott)	15	Y	FAC
4. Vaccinium corymbosum (Blueberry,highbush)	10		FACW
5. Osmanthus americanus (Devil-wood)	7		FAC
6. Callicarpa americana (Beauty-berry,american)	5		FACU
	97	= Total Cover	
50 % of total cover: 48.5	20 % of total cover: 19.4		

Herb Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0	= Total Cover	
50 % of total cover: 0	20 % of total cover: 0		

Woody Vine Stratum (Plot size:_____)			
1. Vitis rotundifolia (Grape,muscadine)	5	Y	FAC
2.			
3.			
4.			
5.			
	5	= Total Cover	
50 % of total cover: 2.5	20 % of total cover: 1		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.8 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	X 2 = _____
FAC species _____	X 3 = _____
FACU species _____	X 4 = _____
UPL species _____	X 5 = _____
Column Totals: _____	(A) _____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: CP1-B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR6/3				N/A	N/A	Sandy	
2-8	10YR5/6				N/A	N/A	Sandy	
8-12+	10YR4/4				N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SR 87 Connector PD&E City/County: Santa Rosa Sampling Date: Sep 16, 2011

Applicant/Owner: FDOT State: Florida Sampling Point: CP2-A

Investigator(s): Todd Campbell / Tim Stuhg Section, Township, Range:

Landform (hillslope, terrace, etc.) slope Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR P Lat: 30°40'10" N Long: 87°1'9.3" W Datum:

Soil Map Unit Name: Rutlege Loamy Sand NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes ___ No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 12 inches

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point CP2-A

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Magnolia virginiana (Magnolia,sweetbay)	25	Y	FACW
2. Cliftonia monophylla (Buckwheat-tree)	15	Y	OBL
3. Cyrilla racemiflora (Cyrilla,swamp)	15	Y	FACW
4. Nyssa biflora (Tupelo,swamp)	15	Y	OBL
5. Persea palustris (Bay,swamp)	10		FACW
6. Pinus elliottii (Pine,slash)	10		FACW
	90	= Total Cover	
50 % of total cover: 45	20 % of total cover: 18		

Sapling Stratum (Plot size:)			
1. Magnolia virginiana (Magnolia,sweetbay)	15	Y	FACW
2. Nyssa biflora (Tupelo,swamp)	15	Y	OBL
3. Cyrilla racemiflora (Cyrilla,swamp)	10	Y	FACW
4. Persea palustris (Bay,swamp)	5		FACW
5.			
6.			
	45	= Total Cover	
50 % of total cover: 22.5	20 % of total cover: 9		

Shrub Stratum (Plot size:)			
1. Ilex cassine (Holly,dahoon)	20	Y	FACW
2. Myrica cerifera (Bayberry,southern)	10	Y	FAC
3. Ilex cassine (Holly,dahoon)	5		FACW
4.			
5.			
6.			
	35	= Total Cover	
50 % of total cover: 17.5	20 % of total cover: 7		

Herb Stratum (Plot size:)			
1. Gaylussacia dumosa (Huckleberry,dwarf)	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	= Total Cover	
50 % of total cover: 2.5	20 % of total cover: 1		

Woody Vine Stratum (Plot size:)			
1. Smilax laurifolia (Greenbrier,laurel-leaf)	3	Y	FACW
2. Vitis rotundifolia (Grape,muscadine)	3	Y	FAC
3.			
4.			
5.			
	6	= Total Cover	
50 % of total cover: 3	20 % of total cover: 1.2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 12 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	X 2 =	
FAC species	X 3 =	
FACU species	X 4 =	
UPL species	X 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: CP2-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR2/1				N/A	N/A	Mucky mineral	
2-7	10YR4/1		10YR5/6		C	M	Sandy	
7-12+	10YR3/1				N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

__ Histosol (A1)
__ Histic Epipedon (A2)
__ Black Histic (A3)
__ Hydrogen Sulfide (A4)
__ Stratified Layers (A5)
X Organic Bodies (A6) **(LRR P, T, U)**
__ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
__ Muck Presence (A8) **(LRR U)**
__ 1 cm Muck (A9) **(LRR P, T)**
__ Depleted Below Dark Surface (A11)
__ Thick Dark Surface (A12)
__ Coast Prairie Redox (A16) **(MLRA 150A)**
__ Sandy Mucky Mineral (S1) **(LRR O, S)**
__ Sandy Gleyed Matrix (S4)
__ Sandy Redox (S5)
__ Stripped Matrix (S6)
__ Dark Surface (S7) **(LRR P, S, T, U)**
__ Polyvalue Below Surface (S8) **(LRR S, T, U)**
__ Thin Dark Suface (S9) **(LRR S, T, U)**
__ Loamy Gleyed Matrix (F1) **(LRR O)**
__ Loamy Gleyed Matrix (F2)
__ Depleted Matrix (F3)
__ Redox Dark Surface (F6)
__ Depleted Dark Surface (F7)
__ Redox Depressions (F8)
__ Marl (F10) **(LRR U)**
__ Depleted Ochric (F11) **(MLRA 151)**
__ Iron Manganese Masses (F12) **(LRR O, P, T)**
__ Umbric Surface (F13) **(LRR P, T, U)**
__ Delta Ochric (F17) **(MLRA 151)**
__ Reduced Vertic (F18) **(MLRA 150A, 150B)**
__ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

__ 1 cm Muck (A9) **(LRR O)**
__ 2 cm Muck (A10) **(LRR S)**
__ Reduced Vertic (F18) **(outside MLRA 150A,B)**
__ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
__ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
__ Red Parent Material (TF2)
__ Very Shallow Dark Surface (TF12)
__ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SR 87 Connector PD&E City/County: Santa Rosa Sampling Date: Sep 16, 2011

Applicant/Owner: FDOT State: Florida Sampling Point: CP2-B

Investigator(s): Todd Campbell / Tim Stuhr Section, Township, Range:

Landform (hillslope, terrace, etc.) hill slope Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR P Lat: 30°40'10.4" N Long: 87°1'9.7" W Datum: NAD 83

Soil Map Unit Name: Rutlege Loamy Sand NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No X	Is the Sampled Area within a Wetland?	Yes ____ No ____
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes ___	No X	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches):	

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point CP2-B

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus palustris (Pine,long-leaf)	7	Y	FACU
2. Quercus virginiana (Oak,live)	7	Y	FACU
3. Quercus incana (Oak blue-jack)	7	Y	UPL
4. Quercus laevis (Oak, turkey)	7	Y	UPL
5. Quercus geminata (Oak,sand-live)	7	Y	UPL
6. Quercus margaretta (Oak,sand-post)	2		UPL
	37	= Total Cover	
50 % of total cover: 18.5	20 % of total cover: 7.4		

Sapling Stratum (Plot size:_____)			
1. Quercus geminata (Oak, sand-live)	7	Y	UPL
2. Pinus palustris (Pine,long-leaf)	5	Y	FACU
3. Quercus nigra (Oak,water)	5	Y	FAC
4. Quercus hemispherica(Oak, laurel)	5	Y	UPL
5. Persea borbonia (Bay,red)	2		FACW
6.			
	24	= Total Cover	
50 % of total cover: 12	20 % of total cover: 4.8		

Shrub Stratum (Plot size:_____)			
1. Ilex vomitoria (Yaupon)	15	Y	FAC
2. Vaccinium elliottii (Blueberry,elliott)	10	Y	FAC
3. Serenoa repens (Palmetto,saw)	5		FACU
4.			
5.			
6.			
	30	= Total Cover	
50 % of total cover: 15	20 % of total cover: 6		

Herb Stratum (Plot size:_____)			
1. Pteridium aquilinum (Fern,bracken)	15	Y	FACU
2. Aristida stricta (Grass,pineland three-awn)	10	Y	FAC
3. Pityopsis graminifolia (Aster, golden)	7	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	32	= Total Cover	
50 % of total cover: 16	20 % of total cover: 6.4		

Woody Vine Stratum (Plot size:_____)			
1. Smilax laurifolia (Greenbrier,laurel-leaf)	3	Y	FACW
2. Vitis rotundifolia (Grape,muscadine)	3	Y	FAC
3.			
4.			
5.			
	6	= Total Cover	
50 % of total cover: 3	20 % of total cover: 1.2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 16 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	X 2 =	10
FAC species	43	X 3 =	129
FACU species	81	X 4 =	324
UPL species	0	X 5 =	0
Column Totals:	129 (A)		463 (B)

Prevalence Index = B/A = 3.59

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: CP2-B

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 6/2				N/A	N/A	Sandy	
3-12+	10YR5/2				N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SR 87 Connector PD&E City/County: Santa Rosa Sampling Date: Oct 5, 2011

Applicant/Owner: FDOT State: Florida Sampling Point: CP3-A

Investigator(s): Todd Campbell / Tim Stuhr Section, Township, Range:

Landform (hillslope, terrace, etc.) Hillslope Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR P Lat: 30°39'49.3" N Long: 86°59'23" W Datum: NAD 83

Soil Map Unit Name: Bibb Kinston Association NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland?	Yes ____ No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes X	No ___	Depth (inches):	2 inches
Water Table Present?	Yes X	No ___	Depth (inches):	surface
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	surface

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point CP3-A

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Nyssa biflora (Tupelo,swamp)	30	Y	OBL
2. Magnolia virginiana (Magnolia,sweetbay)	15	Y	FACW
3. Chamaecyparis thyoides (Cedar,atlantic white)	10		OBL
4. Pinus elliottii (Pine,slash)	5		FACW
5.			
6.			
	60	= Total Cover	
50 % of total cover: 30	20 % of total cover: 12		

Sapling Stratum (Plot size:_____)			
1. Cyrilla racemiflora (Cyrilla,swamp)	10	Y	FACW
2. Magnolia virginiana (Magnolia,sweetbay)	10	Y	FACW
3. Nyssa biflora (Tupelo,swamp)	10	Y	OBL
4.			
5.			
6.			
	30	= Total Cover	
50 % of total cover: 15	20 % of total cover: 6		

Shrub Stratum (Plot size:_____)			
1. Cyrilla racemiflora (Cyrilla,swamp)	10	Y	FACW
2. Lyonia lucida (Fetter-bush)	5	Y	FACW
3. Magnolia virginiana (Magnolia,sweetbay)	5	Y	FACW
4.			
5.			
6.			
	20	= Total Cover	
50 % of total cover: 10	20 % of total cover: 4		

Herb Stratum (Plot size:_____)			
1. Sphagnum spp.	30	Y	OBL
2. Carex glaucescens (Sedge,southern waxy)	10	Y	OBL
3. Chasmanthium ornithorhynchum (Spikegrass,bird-bill)	10	Y	FACW
4. Dichanthelium scabriusculum (Grass,woolly panic)	10	Y	OBL
5. Dulichium arundinaceum (Sedge,three-way)	5		OBL
6. Eriocaulon decangulare (Pipewort,ten-angle)	5		OBL
7. Hypericum galioides (St. john's-wort,bedstraw)	5		OBL
8.			
9.			
10.			
11.			
	75	= Total Cover	
50 % of total cover: 37.5	20 % of total cover: 15		

Woody Vine Stratum (Plot size:_____)			
1. Smilax laurifolia (Greenbrier,laurel-leaf)	2	Y	FACW
2. Smilax walteri (Greenbrier,coral)	2	Y	OBL
3.			
4.			
5.			
	4	= Total Cover	
50 % of total cover: 2	20 % of total cover: 0.8		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 14 (A)

Total Number of Dominant Species Across All Strata: 14 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	X 2 = _____
FAC species _____	X 3 = _____
FACU species _____	X 4 = _____
UPL species _____	X 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: CP3-A

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of Indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR2/1				N/A	N/A	Muck	Mucky Mineral
3-7	10YR4/1		10YR5/4	4	C	N/A	Sandy	
7-12	10YR3/1		10YR5/4	4	C	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- X Organic Bodies (A6) **(LRR P, T, U)**
- X 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: SR 87 Connector PD&E City/County: Santa Rosa Sampling Date: Oct 5, 2011

Applicant/Owner: FDOT State: Florida Sampling Point: CP3-B

Investigator(s): Todd Campbell / Tim Stuhr Section, Township, Range:

Landform (hillslope, terrace, etc.) Local relief (concave, convex, none): none Slope (%):

Subregion (LRR or MLRA): LRR P Lat: 30°39'49.5" N Long: 86°58'56" W Datum: NAD 83

Soil Map Unit Name: Pactolus Loamy Sand NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes X No ___

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No ___
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point CP3-B

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus virginiana (Oak,live)	10	Y	FACU
2. Quercus hemispherica (Oak,laurel)	10	Y	UPL
3. Quercus nigra (Oak,water)	2		FAC
4.			
5.			
6.			
	22	= Total Cover	

50 % of total cover: 11 20 % of total cover: 4.4

Sapling Stratum (Plot size:)			
1. Quercus virginiana (Oak,live)	10	Y	FACU
2. Quercus hemispherica (Oak,laurel)	10	Y	UPL
3. Quercus nigra (Oak,water)	2		FAC
4.			
5.			
6.			
	22	= Total Cover	

50 % of total cover: 11 20 % of total cover: 4.4

Shrub Stratum (Plot size:)			
1. Ilex vomitoria (Yaupon)	15	Y	FAC
2. Quercus hemispherica (Oak,laurel)	15	Y	UPL
3. Vaccinium elliottii (Blueberry,elliott)	15	Y	FAC
4. Ilex glabra (Ink-berry)	10		FACW
5. Vaccinium arboreum (Farkleberry)	10		FACU
6. Cliftonia monophylla (Buckwheat-tree)	3		OBL
	68	= Total Cover	

50 % of total cover: 34 20 % of total cover: 13.6

Herb Stratum (Plot size:)			
1. Aristida stricta (Grass,pineland three-awn)	15	Y	FAC
2. Pteridium aquilinum (Fern,bracken)	15	Y	FACU
3. Andropogon virginicus (Broom-sedge)	1		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	31	= Total Cover	

50 % of total cover: 15.5 20 % of total cover: 6.2

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

50 % of total cover: 0 20 % of total cover: 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	10	X 2 =	20
FAC species	50	X 3 =	150
FACU species	80	X 4 =	320
UPL species	0	X 5 =	0
Column Totals:	143 (A)		493 (B)

Prevalence Index = B/A = 3.45

Hydrophytic Vegetation Indicators:

___ 1 – Rapid Test for Hydrophytic Vegetation

___ 2 – Dominance Test is > 50%

___ 3 – Prevalence Test is ≤ 3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: CP3-B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/1	100			N/A	N/A	Sandy	
6-10	10YR4/3	100			N/A	N/A	Sandy	
10-12+	10YR6/3	100			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- __ Histosol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Surface (A11)
- __ Thick Dark Surface (A12)
- __ Coast Prairie Redox (A16) **(MLRA 150A)**
- __ Sandy Mucky Mineral (S1) **(LRR O, S)**
- __ Sandy Gleyed Matrix (S4)
- __ Sandy Redox (S5)
- __ Stripped Matrix (S6)
- __ Dark Surface (S7) **(LRR P, S, T, U)**
- __ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- __ Thin Dark Suface (S9) **(LRR S, T, U)**
- __ Loamy Gleyed Matrix (F1) **(LRR O)**
- __ Loamy Gleyed Matrix (F2)
- __ Depleted Matrix (F3)
- __ Redox Dark Surface (F6)
- __ Depleted Dark Surface (F7)
- __ Redox Depressions (F8)
- __ Marl (F10) **(LRR U)**
- __ Depleted Ochric (F11) **(MLRA 151)**
- __ Iron Manganese Masses (F12) **(LRR O, P, T)**
- __ Umbric Surface (F13) **(LRR P, T, U)**
- __ Delta Ochric (F17) **(MLRA 151)**
- __ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- __ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- __ 1 cm Muck (A9) **(LRR O)**
- __ 2 cm Muck (A10) **(LRR S)**
- __ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- __ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- __ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- __ Red Parent Material (TF2)
- __ Very Shallow Dark Surface (TF12)
- __ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Appendix B

Soil Photographs and Description

APPENDIX B – SOIL PHOTOGRAPHS AND DESCRIPTIONS

I. UPLAND SOIL TYPES

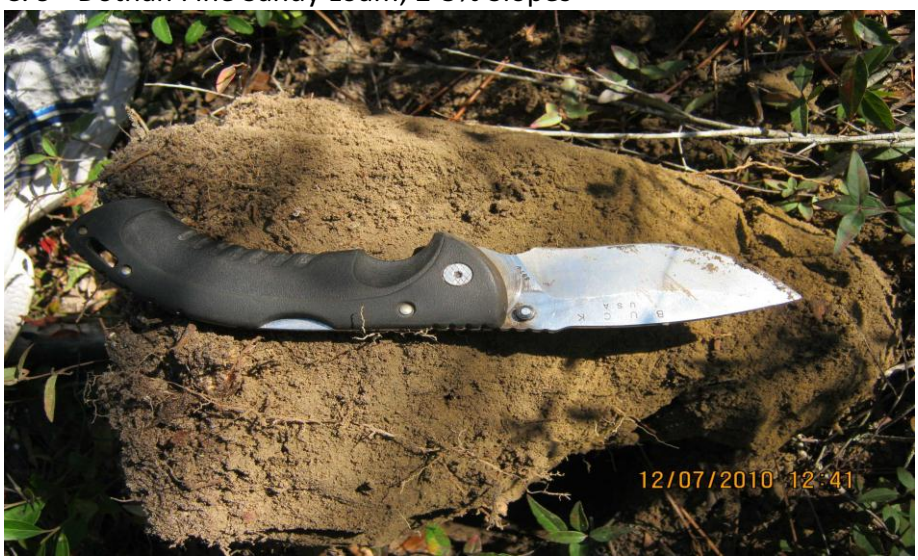
A. 1 - Albany Loamy Sand; 0-5% Slopes

0-3”	A	10YR 3/2 Sand
3”-8”	E1	10YR 3/1 Loamy Sand
8”-12”+	E2	10YR 4/4 Loamy Sand

B. 5 - Bonifay Loamy Sand; 0-5% Slopes

0-12”+	A	10YR 5/4 Loamy Sand

C. 9 - Dothan Fine Sandy Loam; 2-5% Slopes



0-1”	A	10YR 5/2 Sandy Loam
1”-6”	E1	10YR 4/3 Sandy Loam
6”-12”+	E2	10YR 5/6 Sandy Loam

D. 14 - Fuquay Loamy Sand; 0-5% Slopes

0-0.25”	Oi	10YR 2.5/1 Pine Duff
0.25”-6”	A	10YR 3/3 Loamy Sand
6”-12”+	E	10YR 4/4 Loamy Sand

E. 19 - Kalmia Loamy Fine Sand; 2-5% Slopes

0-1”	Oi	10R 2.5/1 Pine Duff
1”-4”	AE1	10YR 7/1 Loamy Fine Sand w/ 10YR 6/2 Loamy Fine Sand
4”-8”	AE2	10YR 5/4 Loamy Fine Sand w/ 10YR 6/4 Loamy Fine Sand
8”-12”+	E	10YR 6/4 Loamy Fine Sand

F. 21 - Lakeland Sand; 0-5% Slopes

0-0.25”	Oi	10R 2.5/1 Pine Duff
0.25”-1.5”	A	10YR 6/4 Loamy Sand
1.5”-5”	AE	10YR 5/4 Loamy Sand
5”-12”+	E	10YR 5/6 Loamy Sand

G. 22 - Lakeland Sand; 5-12% Slopes

0-2”	Oi	10YR 5/3 Leaf Litter Layer
2”-12”+	A	10YR 5/3 Sand

H. 34 - Pactolus Loamy Sand; 0-5% Slopes

0-1”	Oi	10R 2.5/1 Pine Duff
1”-5”	A	10YR 2/1 Loamy Sand
5”-12”+	E	10YR 4/2 Loamy Sand

I. 44 - Troup Loamy Sand; 0-5% Slopes

0-0.5”	Oi	10R 2.5/1 Pine Duff
0.5”-4”	A	10YR 4/3 Loamy Sand
4”-12”+	E	10YR 5/6 Loamy Sand

II. WETLAND SOIL TYPES

A. 3- Bibb-Kinston Association

0-1.5”	A	5G 5/1 Leaf Litter Layer
1.5”-12”+	C	5G 5/1 Clay

B. 37 - Rains Fine Sandy Loam

0-1.5”	Oi	10R 2.5-1 Pine Duff
1.5”-6”	A	10YR 4/1 Sandy Loam
6”-12”+	E	10YR 5/1 Sandy Loam w/ 10YR 5/6 Redox

C. 40 - Rutledge Loamy Sand

0-5”	A	10YR 3/2 Muck
5”-12”+	E	10YR 5/1 Loamy Sand w/ 10YR 6/5 Redox

Appendix C

UMAM Polygon Evaluation Sheets

Alignment 1 UMAM Summary Table

Polygon #	Impact Type	FNAI Wetland ID	FLUCFCS Wetland ID	Location & Landscape Support		Water Environment		Community Structure/Vegetation		Assessment Score	Area (ac)	FL Unit(s)
				Without	With Project	Without	With	Without	With			
1A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	0	10	0	9	0	0.93	2.95	2.75
1	Shading	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	7	10	9	9	7	0.17	15.13	2.52
2	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	9	0	9	0	8	0	0.87	0.04	0.03
3	Shading	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	8	8	8	7	6	0.07	2.02	0.13
4	Shading	Basin Swamp	617-Mixed Wetland Hardwoods	9	8	9	8	9	6	0.17	4.15	0.69
5	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	8	0	0.83	6.35	5.29
6	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	8	0	8	0	7	0	0.77	3.34	2.56
7	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	4.55	3.34
8	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	7	0	0.80	2.34	1.87
9	Shading	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	8	10	8	8	6	0.17	1.08	0.18
9A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	0	10	0	8	0	0.90	2.50	2.25
10	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	6	0	7	0	6	0	0.63	2.75	1.74
11	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	8.14	5.97
12	Permanent-Dredge or Fill	Dome Swamp	630-Mixed Forested Wetland	9	0	9	0	8	0	0.87	1.43	1.24
13	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	6	0	7	0	6	0	0.63	0.25	0.16
14	Indirect	Adjacent to Shading Impact		9	8	10	10	9	8	0.07	60.07	4.00
15	Indirect	Adjacent to Direct Impact		8	6	8	4	7	6	0.23	79.33	18.51
											Total FL>	**53.25**

Acreage Totals	
Direct Impacts	34.64
Shading Impacts	22.38
Indirect Impacts	139.40
Total Wetlands	196.42

Alignment 2 UMAM Summary Table

Polygon #	Impact Type	FNAI Wetland ID	FLUCFCS Wetland ID	Location & Landscape Support		Water Environment		Community Structure/Vegetation		Assessment Score	Area (ac)	FL Unit(s)
				Without	With Project	Without	With	Without	With			
1A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	0	10	0	9	0	0.93	2.95	2.75
1	Shading	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	7	10	9	9	7	0.17	15.13	2.52
2	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	9	0	9	0	8	0	0.87	0.04	0.03
3	Shading	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	8	8	8	7	6	0.07	2.02	0.13
4	Shading	Basin Swamp	617-Mixed Wetland Hardwoods	9	8	9	8	9	6	0.17	4.15	0.69
5	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	8	0	0.83	6.35	5.29
6	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	8	0	8	0	7	0	0.77	3.34	2.56
7	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	4.55	3.34
8	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	9	0	8	0	7	0	0.80	2.34	1.87
9	Shading	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	8	10	8	8	6	0.17	1.08	0.18
9A	Permanent-Dredge or Fill	Bottomland Forest	615-Bottom;and Stream & Lake Swamp	9	0	10	0	8	0	0.90	2.50	2.25
10	Permanent-Dredge or Fill	Basin Swamp	617-Mixed Wetland Hardwoods	6	0	7	0	6	0	0.63	2.75	1.74
11	Permanent-Dredge or Fill	Seepage Slope / Wet Prairie	643-Wet Prairie/Pine Savanna	7	0	8	0	7	0	0.73	8.14	5.97
14	Indirect	Adjacent to Shading Impact		9	8	10	10	9	8	0.07	60.07	4.00
15	Indirect	Adjacent to Direct Impact		8	6	8	4	7	6	0.23	73.94	17.25
											Total FL>	**50.60**

Acreage Totals	
Direct Impacts	30.62
Shading Impacts	22.38
Indirect Impacts	134.01
Total Wetlands	187.01

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 1

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
615	FNAI - Bottomland Forest	Impact (Shading)	15.13

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	OFW

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetlands are the floodplain of the Blackwater River, which flows south and west into the Pensacola Bay.

Assessment area description

The floodplain of the Blackwater River contains a high species diversity of hardwood evergreen and deciduous trees in the canopy and subcanopy. There is limitied development consisting of single family homes to the north and institutional and industrial development to the south. There are currently no bridges within this section of the river; however, navigation in this area is prohibited.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
State Road 90, Santa Rosa County jail, Milton	The Blackwater River is a unique landscape feature within northern Santa Rosa County and this section is an Outstanding Florida Waterway with potential Gulf sturgeon habitat.

Functions	Mitigation for previous permit/other historic use
The floodplains are high quality wetlands that collect and convey water to Pensacola Bay. The river is highly utilized by wildlife for cover and foraging. The intact floodplain helsp prevent erousion.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plants species such as sundews, pitcher plants. There is anticipated utilization by black bear and the the river is listed as critical habitat for the Gulf sturgeon.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

This floodplain area is not proposed for direct impact. There are only minor impacts, primarily from shading, proposed since the area will be bridged.

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2011, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 1 -Blackwater River Bottomland Forest
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Shading)	Daniel Van Nostrand	10/1/2011, update Feb 2013

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	the impact area is relatively intact on the south side of the river; however, the area on the northern side of the river runs adjacent to the powerline ROW. The ROW area have been cleared of canopy and subcanopy vegetation and some erosion and rutting is present. There are currently no impediments to wildlife species and spanning this area with a bridge will reduce future negative impact to wildlife movement.	9	7
.500(6)(b)Water Environment (n/a for uplands)	The river appears to have excellent water quality, appropriate water inputs, and evidence of a typical flooding regime. The floodplain wetlands adjacent to the river provide adequate water filtration and stabilize the soil to prevent erosion. The water flow in the river is currently unobstructed. The use of a bridge will help keep the floodplain vegetation intact to continue to stabilize the soil surface. There will also be stormwater controls on the bridge to collect untreated stormwater and convey it to treatment ponds. The piling supported bridge will not significantly impact the flow of the river.	10	9
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	The floodplain area has a high diversity of canopy and subcanopy species. Portions of the polygon have been disturbed by tree falls, which typically occurs after storm events, and the northern portion of the floodplain area has been cleared and maintained as a powerline ROW. ERC located several threatened/endangered plant species in the groundcover. The development plan will take the threatened species locations into account and any impacts will be minimized to the maximum extent practicable.	9	7

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.93	0.77

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 2.52

Delta = [with-current]
0.17

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 1A

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
615	FNAI - Bottomland Forest	Impact (Direct)	2.95

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	OFW

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetlands are the floodplain of the Blackwater River, which flows south and west into the Pensacola Bay.

Assessment area description

The floodplain of the Blackwater River contains a high species diversity of hardwood evergreen and deciduous trees in the canopy and subcanopy. There is limitied development consisting of single family homes to the north and institutional and industrial development to the south. There are currently no bridges within this section of the river; however, navigation in this area is prohibited.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
State Road 90, Santa Rosa County jail, Milton	The Blackwater River is a unique landscape feature within northern Santa Rosa County and this section is an Outstanding Florida Waterway with potential Gulf sturgeon habitat.

Functions	Mitigation for previous permit/other historic use
The floodplains are high quality wetlands that collect and convey water to Pensacola Bay. The river is highly utilized by wildlife for cover and foraging. The intact floodplain helsp prevent erousion.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plants species such as sundews, pitcher plants. There is anticipated utilization by black bear and the the river is listed as critical habitat for the Gufl sturgeon.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

This portion of the floodplain is proposed for direct impact for the bridge approacht.

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	4/1/2012, update Feb 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 1A -Blackwater River Bottomland Forest
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	4/1/2012, update February 2013

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 9 — with: 0	the impact area is relatively intact on the south side of the river; however, the area on the northern side of the river runs adjacent to the powerline ROW. The ROW area have been cleared of canopy and subcanopy vegetation and some erosion and rutting is present. There are currently no impediments to wildlife species. This polygon will be directly impacted, but a box culvert will be used to facilite wildlife movement of amphibians, reptiles, and small mammals through the floodplain.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 10 — with: 0	The river appears to have excellent water quality, appropriate water inputs, and evidence of a typical flooding regime. The floodplain wetlands adjacent to the river provide adequate water filtration and stabilize the soil to prevent erosion. The water flow in the river is currently unobstructed. This polygon is proposed for direct impact; however, box culverts will be used to maintain pre-construction flow regimes through the floodplain.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 9 — with: 0	The floodplain area has a high diversity of canopy and subcanopy species. Portions of the polygon have been disturbed by tree falls, which typically occurs after storm events, and the northern portion of the floodplain area has been cleared and maintained as a powerline ROW. ERC located several threatened/endangered plant species in the groundcover. The development plan will take the threatened species locations into account and any impacts will be minimized to the maximum extent practicable.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.93	with: 0.00

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 2.75

Delta = [with-current]
0.93

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 2

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617	FNAI - Basin Swamp	Impact (Direct)	0.04

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This is hydrologically connected to the adjacent polygon proposed for shading, Polygon 3. These wetlands connect to the Blackwater River via overland sheet flow.

Assessment area description

This basin wetland is fire suppressed with an appropriate mix of canopy and subcanopy species, but with a shrub layer of woody species that would typically be in coppice if fire regularly maintained this area.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Blackwater Heritage Trail	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plans species such as sundews, pitcher plants. There is anticipated utilization by black bear and the river is listed as critical habitat for the Gulf sturgeon.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	Oct-11

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 2 - Basin Swamp
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	Oct-11

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 9	with: 0	This is a geographically isolated wetland that has unlimited wildlife access and still provides the functions to wildlife and downstream wetlands that it would provide in optimal condition. The fire suppressed understory slightly limits the wildlife utilization of this wetland system.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 9	with: 0	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 8	with: 0	The canopy of this wetland is appropriate; however the groundcover should be diverse but is not due to the fire suppressed shrub and sub-canopy.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.87	0.00

Delta = [with-current]
0.87

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 0.03

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 3

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643	Seepage Slope / Wet Prairie	Impact (Direct)	2.02

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This seepage slope/wet prairie (ss/wp) grades into a deeper basin swamp wetland. The general water flow is to the south and west towards the Blackwater River and eventually the Pensacola Bay.

Assessment area description

The ss/wp is fire suppressed and has a dense canopy of pine and bay trees. There are portions of the wetland with a more open canopy that have allowed the growth of a diverse herbaceous groundcover.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Blackwater Heritage Trail, Frosted Flatwoods Salamander Critical Habitat Unit RFS2 Subunit A	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plans species such as sundews, pitcher plants. There is anticipated utilization by black bear and the river is listed as critical habitat for the Gulf sturgeon. Further, there is an historic Flatwoods salamander with critical habitat in the vicinity of this wetland.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

Located within Flatwoods Salamander critical habitat unit.

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	Oct-11

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 3 - SS/WP
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Shading)	Daniel Van Nostrand	Oct-11

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 9	with: 8
This wetland polygon borders deeper basin swamp wetland polygons and provides a buffer to the deeper wetlands. There is little development surrounding this polygon so access to wildlife is not limited. This wetland is not fragmented and still provides water filtration and retention benefits to downstream receiving waterways. such as Clear Creek and Blackwater River. This wetland polygon is within the proposed Corridor 1 and Corridor 2 alignments and is proposed for a shading impact.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 8
This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for direct impact by Corridor 1 or Corridor 2. a bridge will be used to traverse this wetland area which will prevent damming and subsequent ponding of water, which would alter the wetlands outside of the corridor areas.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 6
The canopy in this wetland has approximately 100 trees per acre which is too dense for a typical seepage slope / wet prairie; however, there is substantial groundcover vegetation including wiregrass throughout the polygon. Typically, fires would manage these wetlands creating an open canopy and sub-canopy and encouraging growth of a diverse pyrogenic herbaceous groundcover. Approximately 20% of this wetland system has been opened up by tree falls and powerline ROWs. These opened areas had the greatest diversity and contained threatened / endangered plant species. This polygon is proposed for a shading impact by either Corridor 1 or Corridor 2. Bridging the wetland will shade the corridor area, but allow for light penetration to maintain an appropriate groundcover once the shrub layer is removed.		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.80	with: 0.73

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.13

Delta = [with-current]
0.07

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 4

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617	Basin Swamp	Impact (Direct)	4.15

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This is an interior, deeper wetland that is buffered on either side by seepage slope / wet prairie. The wetlands convey water to the south towards the Blackwater River via overland sheetflow.

Assessment area description

This basin wetland is fire suppressed with an appropriate mix of canopy and subcanopy species, but with a shrub layer of woody species that would typically be in coppice if fire regularly maintained this area.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Blackwater Heritage Trail, Frosted Flatwoods Salamander Critical Habitat Unit RFS2 Subunit A	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plans species such as sundews, pitcher plants. There is anticipated utilization by black bear and the river is listed as critical habitat for the Gulf sturgeon. Further, there is an historic Flatwoods salamander with critical habitat in the vicinity of this wetland.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	Oct-11

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 4 - Basin Swamp
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Shading)	Daniel Van Nostrand	Oct-11

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 9	with: 8
This wetland polygon is buffered by adjacent seepage slope/wet prairie and I undeveloped along its entire boundary. There is no limit to wildlife utilization and the wetland provides optimal function to downstream aquatic environments. There are no impediments downstream of this polygon and water flows via overland sheetflow to the Blackwater River an OFW. This area is proposed for a shading by either Corridor 1 or Corridor 2. Flow characteristics will be maintained by using bridge spans.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 9	with: 8
This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for direct impact by Corridor 1 or Corridor 2. This wetland polygon will be bridged by corridors 1 and 2, which will help to maintain the hydrology and flow regime of this wetland.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 9	with: 6
The canopy of this wetland is appropriate with a mix of cypress, tupelo, and large slash pine. The shrub layer is comprised primarily of myrtle-leaf holly and large titi. The groundcover is extremely diverse with wiregrass, beakrush, yellow-eyed grass, hatpins, and pitcher plants (including parrot pitcher plants and white-topped pitcher plants). Trees in the canopy may be impacted by the bridge construction, but the groundcover will stay intact.		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.90	with: 0.73

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.69

Delta = [with-current]
0.17

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 5

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643	Seepage Slope / Wet Prairie	Impact (Direct)	6.35

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This seepage slope/wet prairie (ss/wp) grades into a deeper basin swamp wetland. The general water flow is to the south and west towards the Blackwater River and eventually the Pensacola Bay.

Assessment area description

The ss/wp is fire suppressed and has a dense canopy of pine and bay trees.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Blackwater Heritage Trail, Frosted Flatwoods Salamander Critical Habitat Unit RFS2 Subunit A	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plans species such as sundews, pitcher plants. There is anticipated utilization by black bear and the river is listed as critical habitat for the Gulf sturgeon. Further, there is an historic Flatwoods salamander with critical habitat in the vicinity of this wetland.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

Located within Flatwoods Salamander critical habitat unit.

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2011, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 5 - SS/WP
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	10/1/2011, update February 2013

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	This wetland polygon is adjacent to undeveloped land to the north, south, east, and west. There is no direct limitation to wildlife movement to and from this polygon; however, Munson Highway is located in close proximity to the western boundary. This wetland is connected to the Clear Creek system primarily through a drainage ditch.	9	0
.500(6)(b)Water Environment (n/a for uplands)	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for direct impact by Corridor 1 or Corridor 2. Culverts or elevated roadways will be placed at appropriate sections of this or the adjacent basin swamp polygon to prevent damming and subsequent ponding of water, which would alter the wetlands outside of the corridor areas.	8	0
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	The canopy in this wetland has approximately 80-100 trees per acre which is too dense for a typical seepage slope / wet prairie. The dense canopy and fire-suppressed shrub layer have shaded out the typically diverse groundcover vegetation. Typically, fires would manage these wetlands creating an open canopy and sub-canopy and encouraging growth of a diverse pyrogenic herbaceous groundcover. This polygon is proposed for direct impact by either Corridor 1 or Corridor 2.	8	0

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.83	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 5.29

Delta = [with-current]
0.83

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 6

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617	Basin Swamp	Impact (Direct)	3.34

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This is an interior, deeper wetland that is buffered on either side by seepage slope / wet prairie. The wetlands convey water to the south towards the Blackwater River via overland sheetflow.

Assessment area description

This basin wetland is fire suppressed with an appropriate mix of canopy and subcanopy species, but with a shrub layer of woody species that would typically be in coppice if fire regularly maintained this area. The polygon is also bisected by an east-west running powerline ROW.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Blackwater Heritage Trail, Frosted Flatwoods Salamander Critical Habitat Unit RFS2 Subunit A, and Munson Highway	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plans species such as sundews, pitcher plants. There is anticipated utilization by black bear and the river is listed as critical habitat for the Gulf sturgeon. Further, there is an historic Flatwoods salamander with critical habitat in the vicinity of this wetland.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2011, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 6 - Basin Swamp
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	10/1/2011, update February 2013

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 8	with: 0	This wetland polygon is buffered by adjacent seepage slope/wet prairie and is undeveloped along 75% of its boundary. There are partial limitations to wildlife utilization due to the proximity of residential development. The habitat value has been slightly altered by the powerline ROW; however, there are no impediments downstream of this polygon and water flows via overland sheet flow to the Blackwater River an OFW. This area is proposed for impact by either Corridor 1 or Corridor 2. Flow characteristics will be maintained using culverts beneath the roadway.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for direct impact by Corridor 1 or Corridor 2. Culverts or elevated roadways will be placed at appropriate sections of this or the adjacent basin swamp polygon to prevent damming and subsequent ponding of water, which would alter the wetlands outside of the corridor areas. Approximately 1/3 of the this polygon has been disturbed as a powerline ROW.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0	The canopy within the non-disturbed portion of this polygon are appropriate; however, approximately 1/3 of the polygon area is maintained as a powerline easement and there is no canopy due to continual maintenance. Further, there is rutting within the power line where vegetation is not growing.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.77	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 2.56

Delta = [with-current]
0.77

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 7

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643	Seepage Slope / Wet Prairie	Impact (Direct)	4.55

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This polygon is adjacent to residential development, Munson Highway, and the powerline . Due to the adjacent development ditches have been excavated through the wetlands. Water flows from the wetlands through the ditches west towards Clear Creek.

Assessment area description

This SS/WP has been affected by the adjacent residential development and the powerline ROW. The polygon has been ditched which changes the outflow of the water; however, the maintenance within the powerline ROW has increased species diversity in the groundcover.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Blackwater Heritage Trail, Frosted Flatwoods Salamander Critical Habitat Unit RFS2 Subunit A, and Munson Highway	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plans species such as sundews, pitcher plants. There is anticipated utilization by black bear and the river is listed as critical habitat for the Gulf sturgeon. Further, there is an historic Flatwoods salamander with critical habitat in the vicinity of this wetland.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2011, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 7 - Seepage Slope/Wet Prairie
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	10/1/2011, update February 2013

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 7 with: 0	This wetland polygon is adjacent to undeveloped land to the north, south, east, and west. There is no direct limitation to wildlife movement to and from this polygon; however, Munson Highway is located in close proximity to the western boundary. This wetland is connected to the Clear Creek system primarily through a drainage ditch.	
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 8 with: 0	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for a direct impact by Corridor 1 or Corridor 2.	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 7 with: 0	The canopy within the non-disturbed portion of this polygon are appropriate; however, approximately 1/2 of the polygon area is maintained as a powerline easement and there is no canopy due to continual maintenance. This area is proposed for a direct impact bye either corridor 1 or Corridor 2.	

Score = sum of above scores/30 (if uplands, divide by 20)	If preservation as mitigation,	For impact assessment areas
current or w/o pres: 0.73 with: 0	Preservation adjustment factor =	FL = delta x acres = 3.34
	Adjusted mitigation delta =	

Delta = [with-current]	If mitigation	For mitigation assessment areas
0.73	Time lag (t-factor) =	RFG = delta/(t-factor x risk) =
	Risk factor =	

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 8

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643	Seepage Slope / Wet Prairie	Impact (Direct)	2.34

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This polygon is to the west of Munson Highway and directly borders the floodplain of Clear Creek. There are no obstructions to water flow from this wetland, to the floodplain, and eventually to Pensacola Bay.

Assessment area description

This SS/WP is surrounded by undeveloped land, but has been partially impacted by mechanical clearing along the powerline ROW. The mechanical clearing has mimicked fire and increased plant diversity in the groundcover. The remainder of this polygon is fire suppressed with a dense pine canopy.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Munson Highway, Clear Creek.	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging , habitat for wildlife, and creek buffer.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	observed threatened plant species such as sundews, pitcher plants. There is anticipated utilization by black bear

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	October 2012, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 8 - Seepage Slope/Wet Prairie
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	October 2012, update February 2013

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 9	with: 0
This wetland polygon is adjacent to undeveloped land to the north, south, east, and west. It buffers the floodplain of Clear Creek. There is no direct limitation to wildlife movement to and from this polygon; however, Munson Highway is located in close proximity to the eastern boundary. This wetland borders the floodplain bottomland forest associated with Clear Creek and provides direct water input to the creek system and eventually Blackwater River (OFW) and Pensacola Bay. There are no barriers to the movement of water into the creek system. This wetland is proposed for a direct impact for the Clear Creek bridge approaches. The open water portion of the stream will be bridged.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 8	with: 0
This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for a direct impact by Corridor 1 or Corridor 2.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 7	with: 0
The canopy within the non-disturbed portion of this polygon are appropriate; however, approximately 1/2 of the polygon area is maintained as a powerline easement and there is no canopy due to continual maintenance. This area is proposed for a direct impact for the bridge approach.		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.8	with: 0.00

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 1.87

Delta = [with-current]
0.80

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 9

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
615	Bottomland Forest	Impact (Shading)	1.08

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This polygon includes Clear Creek and the Clear Creek floodplain and is therefore directly connected via surface flow to the Blackwater River further downstream.

Assessment area description

This floodplain/bottomland forest is relatively intact even though it is adjacent to residential development and the powerline ROW. The canopy is a mixture of hardwood evergreens and deciduous trees. The understory is diverse and contains threatened endangered plant species.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Munson Highway, Clear Creek	Blackwater Stream (Clear Creek) bisects the floodplain/bottomland forest.

Functions	Mitigation for previous permit/other historic use
The floodplains are high quality wetlands that collect and convey water to Pensacola Bay. The creek is highly utilized by wildlife for cover and foraging. The intact floodplain helps prevent erosion, regulate water temperature, and maintain in-creek habitats.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	The floodplain/bottomland forest is diverse and contains many state threatened plant species such as sundews, pitcher plants, bluestem, meadow beauty, and yellow-eyed grass. There is anticipated utilization by black bear. Clear Creek is not listed as Critical Habitat for the Gulf sturgeon or the reticulated Flatwoods salamander.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	9/1/2012, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 9 - Clear Creek Floodplain/Bottomland Forest
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Shading)	Daniel Van Nostrand	9/1/2012, update February 2013

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	The floodplain bottomland forest is bordered on the west by low density residential development and agriculture and by undeveloped land to the north, south, and east. There is little impediment to wildlife movement into this polygon. The wetland directly supports and maintains the water quality, temperature, and structure of Clear Creek. There are no impediments to water flow between the floodplain and the creek. This area is proposed for a shading impact since a bridge will be constructed over the floodplain and the creek. There are no anticipated significant impacts with bridge construction.	9	8
.500(6)(b)Water Environment (n/a for uplands)	The creek appears to have excellent water quality, appropriate water inputs, and evidence of a typical flooding regime. The floodplain wetlands adjacent to the creek provide adequate water filtration and stabilize the soil to prevent erosion. The water flow in the creek is currently unobstructed. The use of a bridge will help keep the floodplain vegetation intact to continue to stabilize the soil surface. There will also be stormwater controls on the bridge to collect untreated stormwater and convey it to treatment ponds. The piling supported bridge will not significantly impact the flow of the river.	10	8
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	The floodplain area has a high diversity of canopy and subcanopy species. Portions of the polygon have been cleared and maintained as a powerline ROW. ERC located several threatened/endangered plant species in the groundcover. The development plan will take the threatened species locations into account and any impacts will be minimized to the maximum extent practicable.	8	6

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.90	0.73

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.18

Delta = [with-current]
0.17

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 9A

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
615	Bottomland Forest	Impact (Direct)	2.50

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This polygon includes the Clear Creek floodplain and is therefore directly connected via surface flow to the Blackwater River further downstream.

Assessment area description

This floodplain/bottomland forest is relatively intact even though it is adjacent to residential development and the powerline ROW. The canopy is a mixture of hardwood evergreens and deciduous trees. The understory is diverse and contains threatened endangered plant species.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Munson Highway, Clear Creek	Blackwater Stream (Clear Creek) bisects the floodplain/bottomland forest.

Functions	Mitigation for previous permit/other historic use
The floodplains are high quality wetlands that collect and convey water to Pensacola Bay. The creek is highly utilized by wildlife for cover and foraging. The intact floodplain helps prevent erosion, regulate water temperature, and maintain in-creek habitats.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	The floodplain/bottomland forest is diverse and contains many state threatened plant species such as sundews, pitcher plants, bluestem, meadow beauty, and yellow-eyed grass. There is anticipated utilization by black bear. Clear Creek is not listed as Critical Habitat for the Gulf sturgeon or the reticulated Flatwoods salamander.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	9/1/2012, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 9A - Clear Creek Floodplain/Bottomland Forest
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	9/1/2012, update February 2013

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 9 — with: 0	The floodplain bottomland forest is bordered on the west by low density residential development and agriculture and by undeveloped land to the north, south, and east. There is little impediment to wildlife movement into this polygon. The wetland directly supports and maintains the water quality, temperature, and structure of Clear Creek. There are no impediments to water flow between the floodplain and the creek. This area is proposed for a direct impact for the bridge approaches; however, the open water portion of the creek will be bridged.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 10 — with: 0	The creek appears to have excellent water quality, appropriate water inputs, and evidence of a typical flooding regime. The floodplain wetlands adjacent to the creek provide adequate water filtration and stabilize the soil to prevent erosion. The water flow in the creek is currently unobstructed. The use of a bridge over the open water poriton of the creek will minmize upstream flooding. This floodplain/bottomland forest polygon is proposed for direct impact for the bridge approaches.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 8 — with: 0	The floodplain area has a high diversity of canopy and subcanopy species. Portions of the polygon have been cleared and maintained as a powerline ROW. ERC located several threatened/endangered plant species in the groundcover. The development plan will take the threatened species locations into account and any impacts will be minimized to the maximum extent practicable. This polygon is proposed for a direct impact for the bridge approaches.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.90	0.00

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 2.25

Delta = [with-current]
0.90

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 10

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
617	FNAI - Basin Swamp	Impact (Direct)	2.75

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This is an interior, deeper wetland that is buffered on either side by seepage slope / wet prairie. The wetlands convey water to the south towards the Blackwater River via overland sheetflow.

Assessment area description

This basin wetland is fire suppressed within half of the area and the other half has been cleared, but with a shrub layer of woody species that would typically be in coppice if fire regularly maintained this area. The polygon is also bisected by an east-west running powerline ROW.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
None	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	White topped pitcher plant was observed in this wetland and it is anticipated that other threatened plant species would be present with periodic fire. This area is also most likely used by the black bear population in the vicinity.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None during field surveys

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2012, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 PD&E		Polygon 10 - Basin Swamp
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	10/1/2012, update February 2013

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 6 with: 0	This wetland polygon is bordered by undeveloped land to the west and north, agricultural lands and powerline ROW to the south and agricultural lands to the east. Portions of this polygon have been cleared which decrease their value for wildlife utilization. The proximal residential development and adjacent agricultural lands somewhat limit the wildlife movement to and from this polygon. The adjacent wet prairie / seepage slope has been ditched, which affects the localized water flow to and from the basin swamp. This area is proposed for a direct impact by either alternative 1 or alternative 2.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 7 with: 0	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice and because the canopy and subcanopy have been cleared within the powerline ROW and agricultural area. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for direct impact by alternative 1 or alternative 2. Culverts or elevated roadways will be placed at appropriate sections of this or the adjacent basin swamp polygon to prevent damming and subsequent ponding of water, which would alter the wetlands outside of the corridor areas.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 6 with: 0	The majority of this basin swamp polygon has been disturbed by clearing either for agricultural operations or for powerline ROW maintenance. The cleared portions lack the appropriate canopy, but have divers groundcover due to the light penetration to the ground. Typical basin swamps would have diverse canopies and varied groundcover in gaps between canopy. This polygon is proposed for direct impact by either alternative 1 or alternative 2.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.63	with: 0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 1.74

Delta = [with-current]
0.63

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 11

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643	FNAI - Seepage Slope / Wet Prairie	Impact (Direct)	8.14

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

The seepage slope / wet prairie drains southeast toward the Blackwater River via overland sheetflow and through a confined ditch that appears to be excavated through the adjacent agricultural field.

Assessment area description

The ss/wp is fire suppressed and has a dense canopy of pine and bay trees and the remainder has been maintained as a powerline ROW and agricultural field.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
None	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	White topped pitcher plant was observed in this wetland and it is anticipated that other threatened plant species would be present with periodic fire. This area is also most likely used by the black bear population in the vicinity.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None during field surveys

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2012, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 PD&E		Polygon 11 - Seepage Slope/Wet Prairie
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	10/1/2012, update February 2013

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	This wetland polygon is adjacent to undeveloped land to the north, east, and west and is bordered by the powerline ROW and an agricultural field to the south. There is minor limitation to wildlife movement to and from this polygon due to the agricultural land. This wetland is connected south through wetlands and a confined ditch through the agricultural land. This wetland is proposed for direct impact by either alternative 1 or alternative 2.	7	0
.500(6)(b)Water Environment (n/a for uplands)	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for a direct impact by alternative1 or alternative 2.	8	0
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	The canopy within the non-disturbed portion of this polygon are appropriate; however, approximately 1/2 of the polygon area is maintained as a powerline easement and there is no canopy due to continual maintenance. This area is proposed for a direct impact by either alternative 1 or alternative 2.	7	0

Score = sum of above scores/30 (if uplands, divide by 20)		
	current or w/o pres	with
	0.73	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 5.97

Delta = [with-current]
0.73

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E - Alternative 1 only		Polygon 12

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
630	FNAI - Dome Swamp	Impact (Direct)	1.43

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This is an isolated wetland system that is surrounded by well drained sandhill uplands.

Assessment area description

This dome swamp wetland is fire suppressed on the exterior with an appropriate mix of canopy and subcanopy species in the center. If fire periodically burned this wetland, the out rim would contain more herbaceous species than the current woody coverage.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
SR 87 North	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	No threatened or endangered species were observed in this polygon area, but it is anticipated that a similar plant composition to the other basin wetlands would exist with more frequent fires.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None during field survey

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2011, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E - Alternative 1 only		Polygon 12 - Dome Swamp
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	10/1/2011, update February 2013

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	9	0	This is a geographically isolated wetland that has unlimited wildlife access to the east, south, and west and still provides the functions to wildlife and downstream wetlands that it would provide in optimal condition. The fire suppressed understory slightly limits the wildlife utilization of this wetland system; however it is suitable habitat for many breeding amphibians and reptiles since there is evidence that it fill with water ephemerally and does not contain fish. This wetland is proposed for direct impact by alternative 1.
.500(6)(b)Water Environment (n/a for uplands)	9	0	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod that is suitable for many species that require ephemeral ponds as a component of their life cycles. The wetland lacks community zonation along the ecotone adjacent to the upland because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. This wetland is proposed for direct impact by alternative 1.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	8	0	The canopy of this wetland is appropriate; however the groundcover should be diverse along the ecotone but is not due to the fire suppressed shrub and sub-canopy. This polygon is proposed for direct impact by alternative 1.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.87	0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 1.24

Delta = [with-current]
0.87

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E - Alternative 1 only		Polygon 13

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643	Seepage Slope / Wet Prairie	Impact (Direct)	0.25

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

This seepage slope / wet prairie polygon is bisected by a dirt road and connected under the road via a culvert; however, the wetland is isolated.

Assessment area description

The ss/wp is fire suppressed, has been bisected by a dirt road, and has been cleared.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
SR 87 North	None

Functions	Mitigation for previous permit/other historic use
This wetlands provides water filtration, water retention, foraging and habitat for wildlife.	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Black bear, deer, armadillo, amphibians, birds, reptiles, small mammals, invertebrates within the river	No T&E plant species were observed within this wetland; however, with appropriate management it is expected that there would be higher species diversity.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None during field survey

Additional relevant factors:

none

Assessment conducted by:	Assessment date(s):
Dan Van Nostrand	10/1/2011, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E - Alternative 1 only		Polygon 13 - Seepage Slope/Wet Prairie
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact (Direct)	Daniel Van Nostrand	10/1/2011, update February 2013

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 6 with: 0	This wetland polygon is adjacent to undeveloped land and low density residential development. There is minor limitation to wildlife movement to and from this polygon due to the residential land. This wetland is isolated and has been cut in half by Oakland Drive, a dirt road. There is a culvert beneath the road; however it has impacted the normal flow patter within the wetland. This wetland is proposed for direct impact by alternative 1..
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 7 with: 0	This wetland has appropriate hydrophytic vegetation and appears to support the appropriate hydroperiod. The wetland lacks community zonation because the fire regime is not adequate to maintain the subcanopy and shrub strata woody species as coppice. There is no evidence of siltation in this wetland from surrounding land uses. There are hydric soils present. This area is proposed for a direct impact by alternative1.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 6 with: 0	The canopy within the non-disturbed portion of this polygon are appropriate; however, approximately 1/2 of the polygon area has been cleared and there is no canopy due to continual maintenance. This area is proposed for a direct impact bye either alternative 1.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres: 0.63
with: 0

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.16

Delta = [with-current]
0.63

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E - Alternative 1 only		Polygon 14

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643	Seepage Slope / Wet Prairie	Secondary and Cumulative Impacts adjacent to shading impacts	60.07

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetlands within this secondary and cumulative impact polygon are adjacent to the proposed bridges on the Blackwater River, Clear Creek, and the reticulated Flatwoods salamander critical habitat area. All wetlands directly connect to either the Blackwater River or Clear Creek via surface water sheet flow.

Assessment area description

These wetlands are similar in habitat quality to impact polygons 1, 3, 4, 8, and 9. The wetlands areas contain Bottomland Hardwood and Wet Prairie habitats.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Blackwater River, Coldwater Creek, RFS2 Critical Habitat, Munson Highway, Blackwater Heritage Trail	

Functions	Mitigation for previous permit/other historic use
Water filtration, sediment stabilization, wildlife habitat, river and creek buffer	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Migratory birds, small-medium-large mammals, reptiles, amphibians	many threatened plant species (sundews, pitcher plants, lily, etc.), Flatwoods salamander, black bear.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None during field survey

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Daniel Van Nostrand	9/1/2012, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 14 - S/C Impacts (shading)
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Secondary and Cumulative Impacts Shading	Daniel Van Nostrand	9/1/2012, update February 2013

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 9 with: 8	This secondary and cumulative wetland polygon is adjacent to proposed shading impacts from the bridges over the Blackwater River, Clear Creek, and the RFS2 Critical Habitat unit. There is minor limitation to wildlife movement to and from this polygon due to the residential land. Due to the minimization of impacts by bridging there will be minor impacts to the location and landscape support.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 10 with: 10	Due to the minimization of impacts by bridging these wetlands and collecting stormwater, there will be no impacts to wetlands outside of the direct bridge footprint.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 9 with: 8	There will be minor secondary and cumulative impacts to vegetation outside of the bridge footprint during the construction process; however, it is anticipated that the wetlands in these polygons will regenerate with native, wetland vegetation soon after the construction occurs.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres: 0.93	with: 0.87

Delta = [with-current]
0.07

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = 4.00

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 15

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
643, 617, & 630	Seepage Slope / Wet Prairie, Basin Swamp, and Dome Swamp	Secondary & Cumulative adjacent to direct impacts	Alt. 1 = 79.33 & Alt. 2 = 73.94

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Blackwater River	III	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Wetlands within this secondary and cumulative impact polygon are adjacent to the proposed direct wetland impacts within the corridor areas. All wetlands directly connect to either the Blackwater River or Clear Creek via surface water sheet flow or through ditches.

Assessment area description

These wetlands are similar in habitat quality to impact polygons 2, 5, 6, 7, 10, 11, 12 and 13. The wetlands areas contain seepage slopes/wet prairies, basin swamps, and dome swamps.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
SR 87 North, Munson Highway, Blackwater River, Coldwater Creek, RFS2 Critical Habitat, Munson Highway, Blackwater Heritage Trail	

Functions	Mitigation for previous permit/other historic use
Water filtration, sediment stabilization, wildlife habitat, river and creek buffer	N/A

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Migratory birds, small-medium-large mammals, reptiles, amphibians	many threatened plant species (sundews, pitcher plants, lily, etc.) and black bear.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None during field survey

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Daniel Van Nostrand	9/1/2012, update February 2013

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
SR 87 Connector PD&E		Polygon 15 - S/C Impacts
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Secondary and Cumulative Impacts Adjacent to Direct Impact Areas	Daniel Van Nostrand	9/1/2012, update February 2013

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface water functions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	This secondary and cumulative wetland polygon is adjacent to proposed direct impacts from the proposed corridor alternatives. The new roadway will limit wildlife movement within the general vicinity cause more likelihood of vehicular deaths to wildlife. Further, water flows may be altered due to required water collection and conveyance for roadway features changing inputs downstream.	8	6
.500(6)(b)Water Environment (n/a for uplands)	Due to the proposed project impacts, flow between wetlands on either side of the proposed corridor will be altered from its current state.	8	4
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	There will be only minor impacts to the vegetative structure of the wetlands in the secondary and cumulative impact polygons during construction. Following construction it is anticipated that any disturbed vegetation will regenerate with native wetland vegetation; however, a new roadway introduces a vector for the dispersal of invasive plant species.	7	6

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.77	0.53

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = **Alt. 1**: 18.51 & **Alt. 2**: 17.25

Delta = [with-current]
0.23

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date 02-04-2004]

Appendix D

Wetland Polygon Photographs

Appendix D – Wetland/UMAM Polygon Photographs

A. Alignments 1 and 2

1. Polygon 1A & 1 – Bottomland Forest (FLUFCS 615)

2. Polygon 2 – Basin Swamp (FLUFCS 617)

3. Polygon 3 – Seepage Slope / Wet Prairie (FLUFCS 643)

4. Polygon 4 – Basin Swamp (FLUFCS 617)

5. Polygon 5 – Seepage Slope / Wet Prairie (FLUFCS 643)

6. Polygon 6 – Basin Swamp (FLUFCS 617)

7. Polygon 7 – Seepage Slope / Wet Prairie (FLUFCS 643)

8. Polygon 8 – Seepage Slope / Wet Prairie (FLUFCS 643)

9. Polygon 9 – Bottomland Forest (FLUFCS 615)

10. Polygon 10 – Basin Swamp (FLUFCS 617)

11. Polygon 11 – Seepage Slope / Wet Prairie (FLUFCS 643)

B. Alignment 1 Only

1. Polygon 12 – Dome Swamp (FLUFCS 630)

2. Polygon 13 – Seepage Slope / Wet Prairie (FLUFCS 643)

Appendix E

FDEP State Lands Determination

Florida Department of
Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3900

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herchel T. Vinyard, Jr.
Secretary

October 11, 2011

Mr. Dan Van Nostrand
Senior Project Manager
Ecological Resource Consultants, Inc.
Corporate Office Panama City Beach
100 Amar Place
Panama City Beach, Florida 32413

Dear Mr. Nostrand:

Examination of the information you furnished on September 28, indicates that submerged lands lying below the mean high water line of Clear Creek in Section 24, Township 2 North, Range 28 West and the Blackwater River in Section 19, Township 2 North, Range 27 West are state owned.

The conclusions stated herein are based on a review of records currently available within the Department of Environmental Protection as supplemented, in some cases, by information furnished by the requesting party. Additional records will be reviewed if provided.

If you have questions regarding this determination, please contact Sandra Harris, Planning Manager, at the above address, mail stop No. 108 or by telephone at (850) 245-2788.

Sincerely,

Terry E. Wilkinson, Chief
Bureau of Survey of Mapping
Division of State Lands

TEW/sh
F:\TITLE\SANDRA\2011-04\ClearCreek&BlackwaterRiver.doc

Appendix G

Typical Sections Package

STATE OF FLORIDA

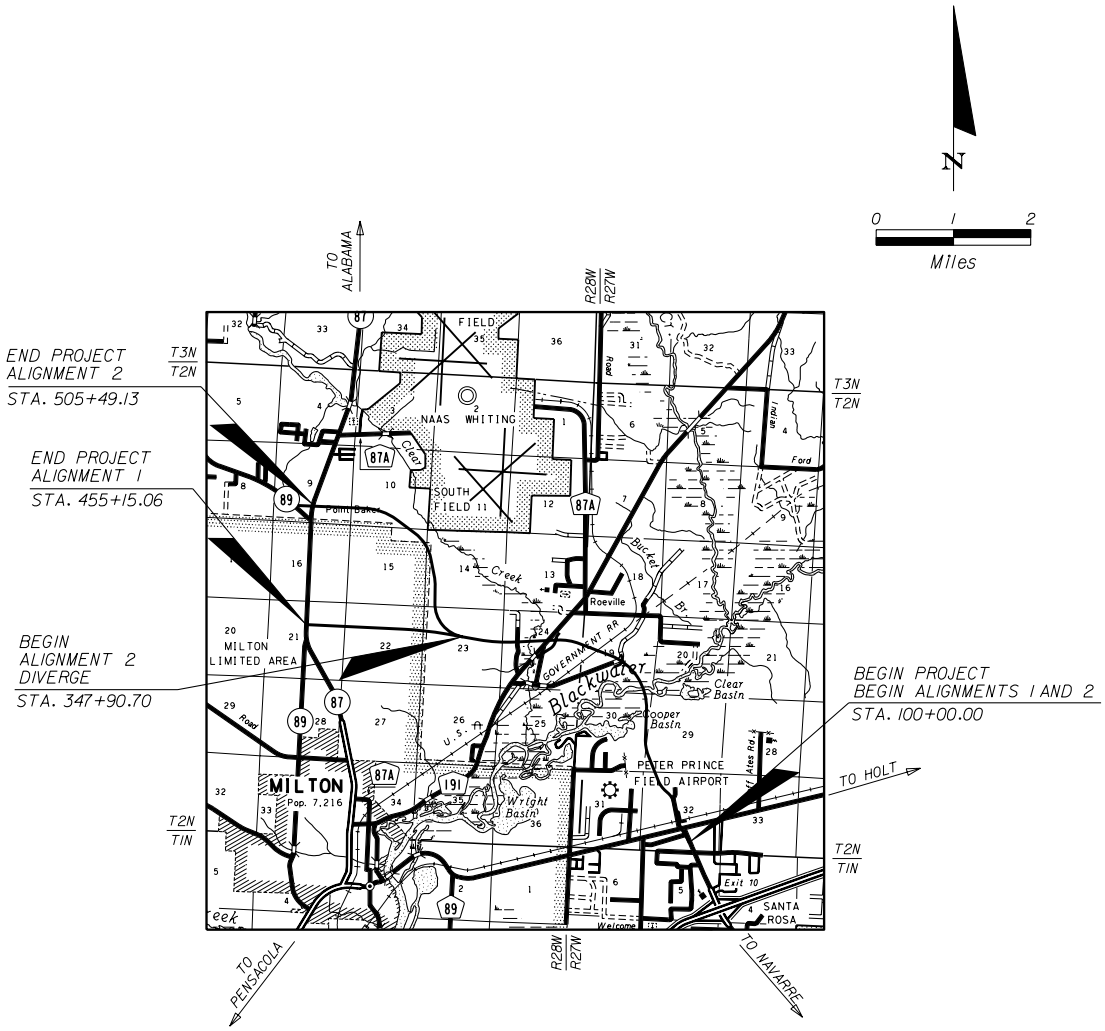
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID
416748-3-22-01 AND 416748-3-22-02

SR 87 CONNECTOR FROM
SR 87S @ SR 10 (US 90) TO SR 87N

SANTA ROSA COUNTY



PREPARED BY

METRIC ENGINEERING, INC.
ENGINEERS • PLANNERS

2616 JENKS AVE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB- 0002294

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 416748-3-22-01 AND 416748-3-22-02 COUNTY (SECTION) SANTA ROSA (58040)

PROJECT DESCRIPTION ALIGN. 1 AND 2; STA. 100+00 - 253+60 (FROM S. OF US 90 TO THE BLACKWATER RIVER BRIDGE)
ALIGN. 1: STA. 435+29 - 455+15 (AT CONNECTION TO SR 87N)
ALIGN. 2: STA. 464+44 - 505+49 (AT CONNECTION TO SR 87N)

PROJECT CONTROLS

FUNCTIONAL CLASSIFICATION

( ) RURAL
(X) URBAN

( ) FREEWAY/EXPWY. ( ) MAJOR COLL.
(X) PRINCIPAL ART. ( ) MINOR COLL.
( ) MINOR ART. ( ) LOCAL

HIGHWAY SYSTEM

Yes	No	
( )	(X)	NATIONAL HIGHWAY SYSTEM
( )	(X)	FLORIDA INTRASTATE HIGHWAY SYSTEM
( )	(X)	STRATEGIC INTERMODAL SYSTEM
(X)	( )	STATE HIGHWAY SYSTEM
( )	(X)	OFF STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
(X) 3 - RESTRICTIVE w/660 ft. Connecting Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON- RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RRR INTERSTATE / FREEWAY
( ) RRR NON-INTERSTATE / FREEWAY
( ) TDLC / NEW CONSTRUCTION / RECONSTRUCTION
( ) TDLC / RRR
( ) MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)(OFF-STATE HIGHWAY ONLY)

TRAFFIC

	YEAR	AADT
CURRENT	2009	0
OPENING	2015	10,731
DESIGN	2035	19,746

		DISTRIBUTION	
DESIGN SPEED	45	K	9.0%
POSTED SPEED	45	D	58.7%
		T_{24}	5%

DESIGN SPEED APPROVALS

JOHN S. GOLDEN, P.E.
DISTRICT DESIGN ENGINEER — DATE

JARED PERDUE, P.E.
DISTRICT TRAFFIC OPERATIONS ENGINEER — DATE

LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:

ACCESS MANAGEMENT: CONNECTION SPACING - DRIVEWAY TURNOUTS JUST NORTH OF US 90 - ALIGNMENTS 1 AND 2
CONNECTION SPACING - DRIVEWAY TURNOUTS JUST EAST OF SR 87N - ALIGNMENT 1
MEDIAN OPENING SPACING - BOBBY BROWN ROAD AT BEGINNING OF ALIGNMENTS 1 AND 2
MEDIAN OPENING SPACING - SEASON DRIVE AT THE END OF ALIGNMENT 2

LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:

BRIDGE OVER BLACKWATER RIVER, BLACKWATER HERITAGE TRAIL AND WETLANDS

LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

AT&T, AT&T DISTRIBUTION, CITY OF MILTON, CSX RAILROAD, EAST MILTON WATER SYSTEM, GULF POWER, MCI, MEDIACOM, OKALOOSA GAS, POINT BAKER WATER SYSTEM, QWEST, SOUTHERN LIGHT, SPRINT/NEXTEL

LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:

SR 87 HAS BEEN DESIGNATED AS A "HURRICANE EVACUATION ROUTE"

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID 416748-3-22-01 AND 416748-3-22-02 COUNTY (SECTION) SANTA ROSA (58040)

PROJECT DESCRIPTION ALIGN. 1: STA. 253+60 - 435+29 AND ALIGN. 2: STA. 253+60 - 464+44 (FROM N. OF THE BLACKWATER RIVER BRIDGE TO E. OF SR 87N CONNECTION)

PROJECT CONTROLS

FUNCTIONAL CLASSIFICATION

(X) RURAL
( ) URBAN

( ) FREEWAY/EXPWY. ( ) MAJOR COLL.
(X) PRINCIPAL ART. ( ) MINOR COLL.
( ) MINOR ART. ( ) LOCAL

HIGHWAY SYSTEM

Yes	No	
( )	(X)	NATIONAL HIGHWAY SYSTEM
( )	(X)	FLORIDA INTRASTATE HIGHWAY SYSTEM
( )	(X)	STRATEGIC INTERMODAL SYSTEM
(X)	( )	STATE HIGHWAY SYSTEM
( )	(X)	OFF STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

( ) 1 - FREEWAY
( ) 2 - RESTRICTIVE w/Service Roads
(X) 3 - RESTRICTIVE w/660 ft. Connecting Spacing
( ) 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
( ) 5 - RESTRICTIVE w/440 ft. Connection Spacing
( ) 6 - NON- RESTRICTIVE w/1320 ft. Signal Spacing
( ) 7 - BOTH MEDIAN TYPES

CRITERIA

(X) NEW CONSTRUCTION / RECONSTRUCTION
( ) RRR INTERSTATE / FREEWAY
( ) RRR NON-INTERSTATE / FREEWAY
( ) TDLC / NEW CONSTRUCTION / RECONSTRUCTION
( ) TDLC / RRR
( ) MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)(OFF-STATE HIGHWAY ONLY)

TRAFFIC

	YEAR	AADT
CURRENT	2009	0
OPENING	2015	10,731
DESIGN	2035	19,746

		DISTRIBUTION
DESIGN SPEED	65	K 9.0%
POSTED SPEED	60	D 58.7%
		T_{24} 5%

DESIGN SPEED APPROVALS

JOHN S. GOLDEN, P.E.
DISTRICT DESIGN ENGINEER — DATE

JARED PERDUE, P.E.
DISTRICT TRAFFIC OPERATIONS ENGINEER — DATE

LIST ANY POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION ELEMENTS:

NONE

LIST MAJOR STRUCTURES LOCATION/DESCRIPTION - REQUIRING INDEPENDENT STRUCTURE DESIGN:

BRIDGE OVER CLEAR CREEK

LIST MAJOR UTILITIES WITHIN PROJECT CORRIDOR:

AT&T, AT&T DISTRIBUTION, CITY OF MILTON, CSX RAILROAD, EAST MILTON WATER SYSTEM, GULF POWER, MCI, MEDIACOM, OKALOOSA GAS, POINT BAKER WATER SYSTEM, QWEST, SOUTHERN LIGHT, SPRINT/NEXTEL

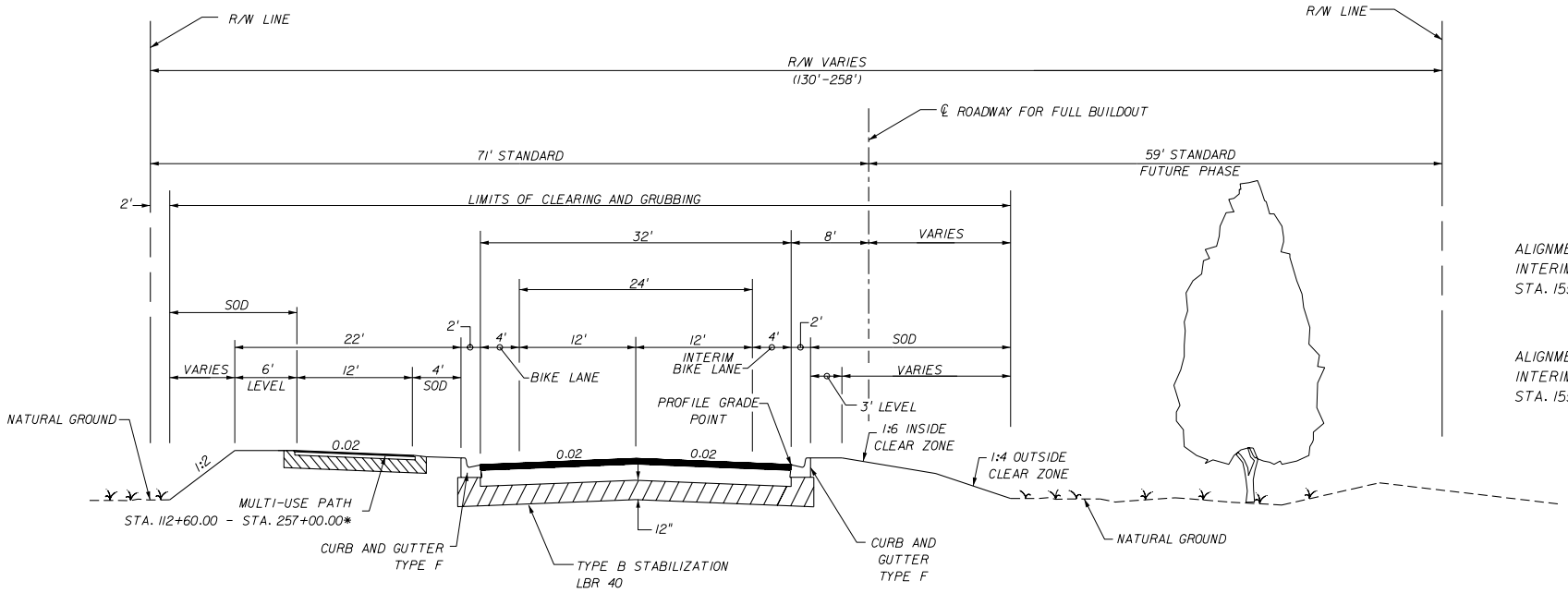
LIST OTHER INFORMATION PERTINENT TO DESIGN OF PROJECT:

SR 87 HAS BEEN DESIGNATED AS A "HURRICANE EVACUATION ROUTE"

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	416748-3-22-01 AND 416748-3-22-02	FEDERAL AID PROJECT NO.	SFTI 296 R AND SI29 348 R	COUNTY NAME	SANTA ROSA
SECTION NO.	58040	ROAD DESIGNATION	SR 87 CONNECTOR	LIMITS/MILEPOST	ALIGNMENT 1 - STA 100+00 - STA 455+15 ALIGNMENT 2 - STA 100+00 - STA 505+49
PROJECT DESCRIPTION	SR 87 CONNECTOR FROM SR 10 (US 90) TO SR 87 NORTH				

PROPOSED INTERIM URBAN ROADWAY TYPICAL SECTION



ALIGNMENT 1
INTERIM:
STA. 155+00 - STA. 253+71.75*

ALIGNMENT 2
INTERIM:
STA. 155+00 - STA. 253+71.75*

*FOR AREAS WITHOUT THE MULTI-USE PATH, THE LEFT SIDE WILL MIRROR THE RIGHT SIDE

DESIGN SPEED = 45 MPH
CLEAR ZONE = 24'

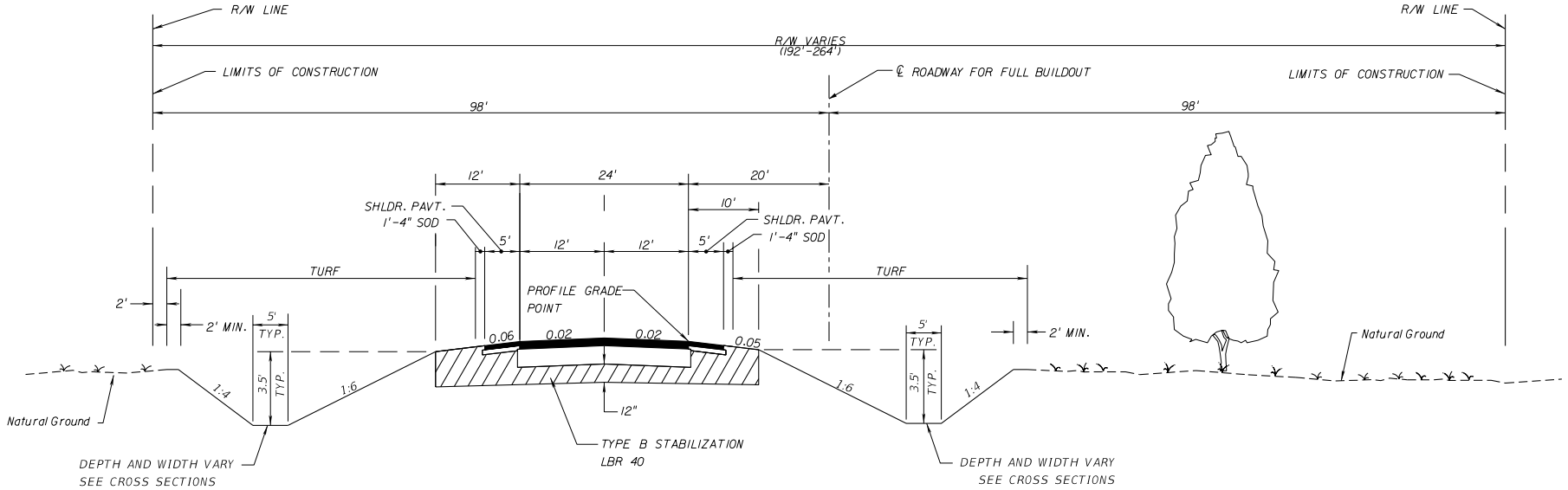
*INCLUDES BLACKWATER RIVER BRIDGE

APPROVED BY	JESSICA BLOOMFIELD, P.E.	FDOT CONCURRENCE	FHWA CONCURRENCE
Engineer Of Record	DATE	JOHN S. GOLDEN, P.E. FDOT District Design Engineer	DATE	FHWA Transportation Engineer	DATE

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	416748-3-22-01 AND 416748-3-22-02	FEDERAL AID PROJECT NO.	SFTI 296 R AND SI29 348 R	COUNTY NAME	SANTA ROSA
SECTION NO.	58040	ROAD DESIGNATION	SR 87 CONNECTOR	LIMITS/MILEPOST	ALIGNMENT 1 - STA 100+00 - STA 455+15 ALIGNMENT 2 - STA 100+00 - STA 505+49
PROJECT DESCRIPTION	SR 87 CONNECTOR FROM SR 10 (US 90) TO SR 87 NORTH				

PROPOSED INTERIM RURAL ROADWAY TYPICAL SECTION



DESIGN SPEED = 65 MPH
CLEAR ZONE = 36'

ALIGNMENT 1
BUILDOUT:
STA. 253+71.75 - STA. 441+89*

ALIGNMENT 2
BUILDOUT:
STA. 253+71.75 - STA. 480+00*

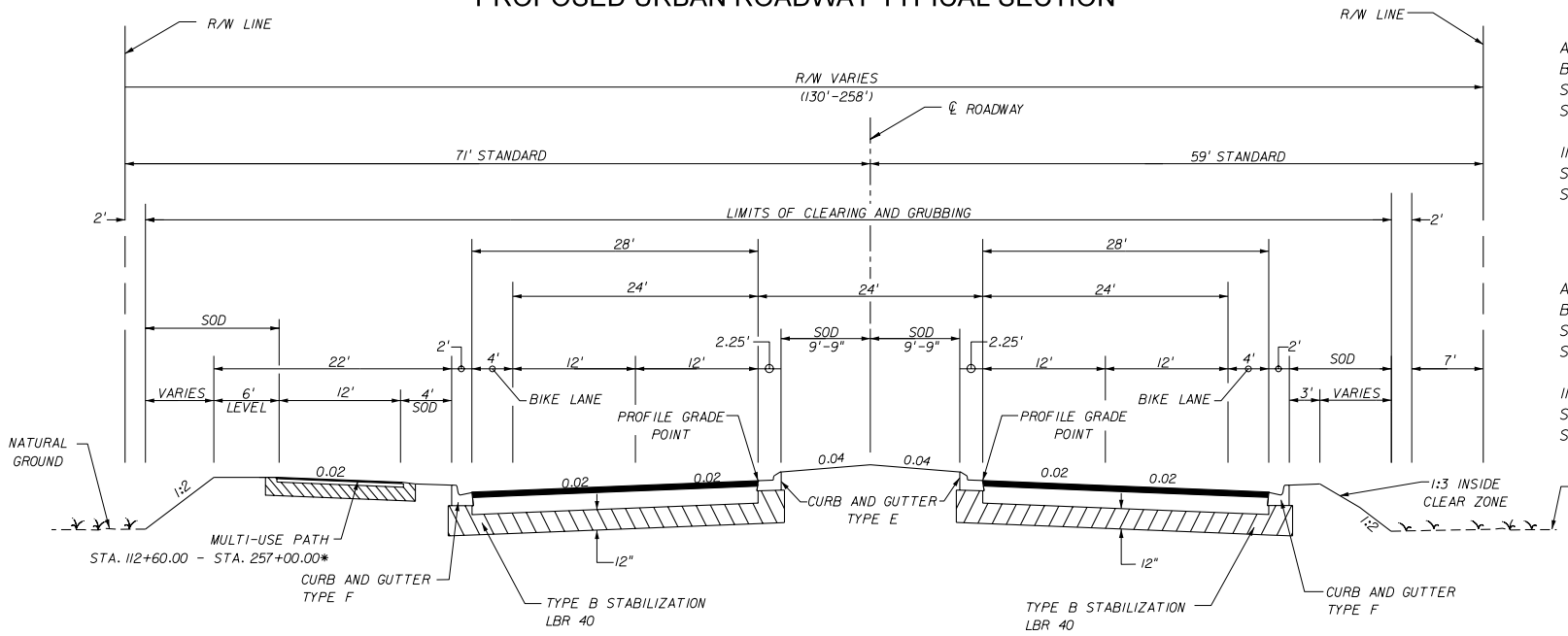
*INCLUDES CLEAR CREEK BRIDGE

APPROVED BY JESSICA BLOOMFIELD, P.E.	FDOT CONCURRENCE	FHWA CONCURRENCE
Engineer Of Record — DATE	JOHN S. GOLDEN, P.E. FDOT District Design Engineer — DATE	FHWA Transportation Engineer — DATE

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	416748-3-22-01 AND 416748-3-22-02	FEDERAL AID PROJECT NO.	SFTI 296 R AND SI29 348 R	COUNTY NAME	SANTA ROSA
SECTION NO.	58040	ROAD DESIGNATION	SR 87 CONNECTOR	LIMITS/MILEPOST	ALIGNMENT 1 - STA 100+00 - STA 455+15 ALIGNMENT 2 - STA 100+00 - STA 505+49
PROJECT DESCRIPTION	SR 87 CONNECTOR FROM SR 10 (US 90) TO SR 87 NORTH				

PROPOSED URBAN ROADWAY TYPICAL SECTION



ALIGNMENT 1
BUILDOUT:
STA. 100+00 - STA. 253+71.75*
STA. 441+89 - STA. 455+15

INTERIM:
STA. 100+00 - STA. 155+00
STA. 441+89 - STA. 455+15

ALIGNMENT 2
BUILDOUT:
STA. 100+00 - STA. 253+71.75*
STA. 480+00 - STA. 505+64

INTERIM:
STA. 100+00 - STA. 155+00
STA. 480+00 - STA. 505+64

*FOR AREAS WITHOUT THE MULTI-USE PATH, THE LEFT SIDE WILL MIRROR THE RIGHT SIDE

DESIGN SPEED = 45 MPH
CLEAR ZONE = 24'

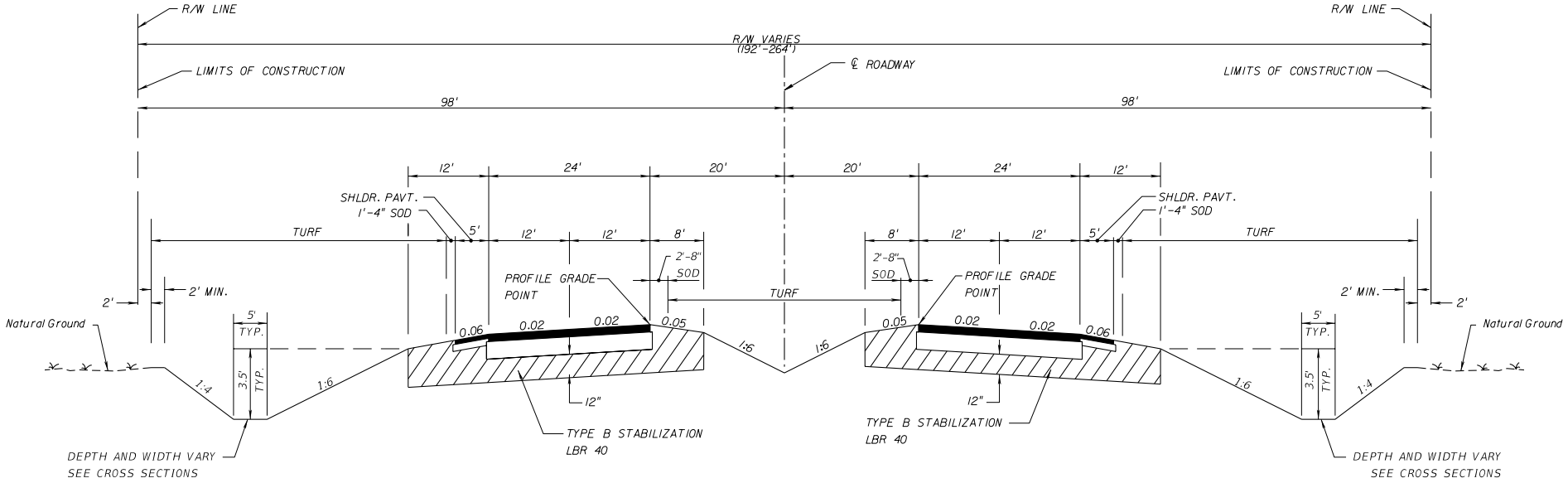
*INCLUDES BLACKWATER RIVER BRIDGE

APPROVED BY	JESSICA BLOOMFIELD, P.E.	FDOT CONCURRENCE	FHWA CONCURRENCE
Engineer Of Record	DATE	JOHN S. GOLDEN, P.E. FDOT District Design Engineer	DATE	FHWA Transportation Engineer	DATE

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	416748-3-22-01 AND 416748-3-22-02	FEDERAL AID PROJECT NO.	SFTI 296 R AND SI29 348 R	COUNTY NAME	SANTA ROSA
SECTION NO.	58040	ROAD DESIGNATION	SR 87 CONNECTOR	LIMITS/MILEPOST	ALIGNMENT 1 - STA 100+00 - STA 455+15 ALIGNMENT 2 - STA 100+00 - STA 505+49
PROJECT DESCRIPTION	SR 87 CONNECTOR FROM SR 10 (US 90) TO SR 87 NORTH				

PROPOSED RURAL ROADWAY TYPICAL SECTION



DESIGN SPEED = 65 MPH
CLEAR ZONE = 36'

ALIGNMENT 1 BUILDOUT:	ALIGNMENT 2 BUILDOUT:
STA. 253+71.75 - STA. 441+89*	STA. 253+71.75 - STA. 480+00*

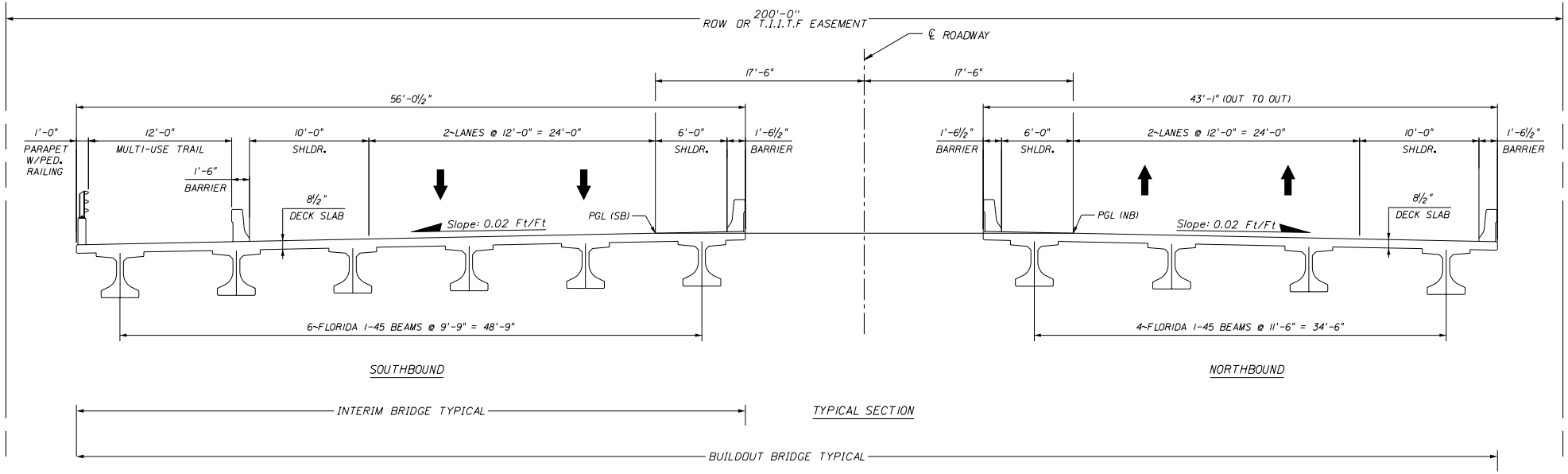
*INCLUDES CLEAR CREEK BRIDGE

APPROVED BY JESSICA BLOOMFIELD, P.E.	FDOT CONCURRENCE	FHWA CONCURRENCE
Engineer Of Record — DATE	JOHN S. GOLDEN, P.E. FDOT District Design Engineer — DATE	FHWA Transportation Engineer — DATE

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	416748-3-22-01 AND 416748-3-22-02	FEDERAL AID PROJECT NO.	SFTI 296 R AND SI29 348 R	COUNTY NAME	SANTA ROSA
SECTION NO.	58040	ROAD DESIGNATION	SR 87 CONNECTOR	LIMITS/MILEPOST	ALIGNMENT 1 - STA 100+00 - STA 455+15 ALIGNMENT 2 - STA 100+00 - STA 505+49
PROJECT DESCRIPTION	SR 87 CONNECTOR FROM SR 10 (US 90) TO SR 87 NORTH				

PROPOSED BRIDGE TYPICAL SECTION - BLACKWATER RIVER BRIDGE - INTERIM AND BUILDOUT



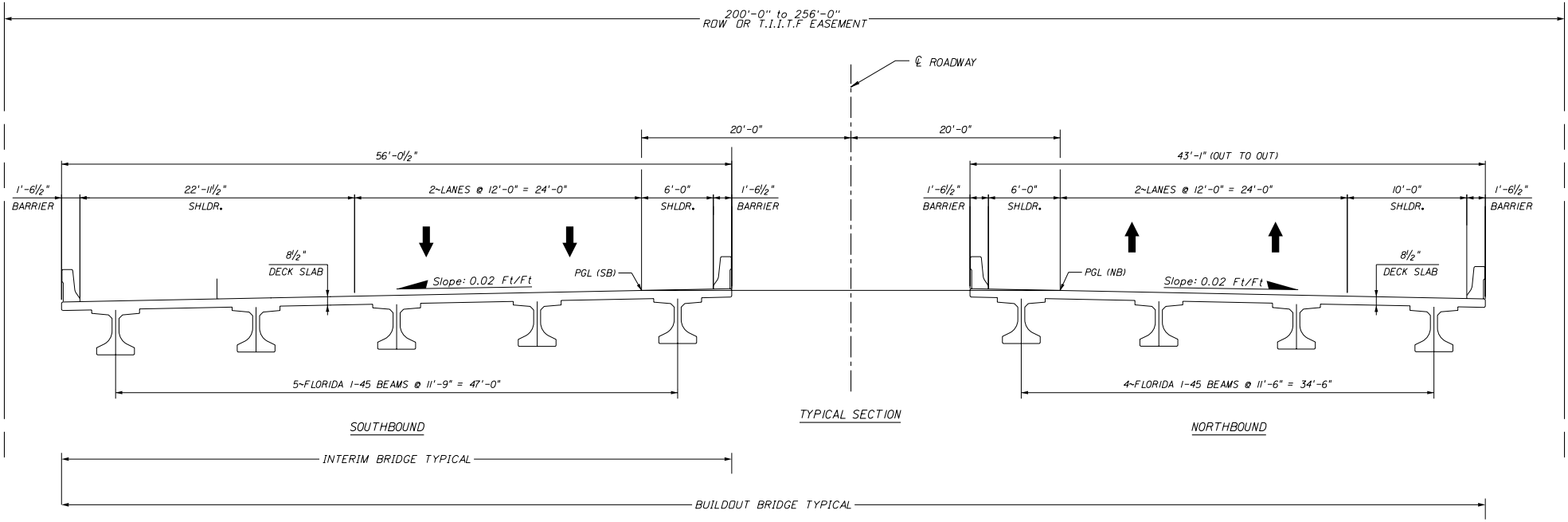
ALIGNMENTS 1 AND 2
BUILDOUT AND INTERIM:
STA. 198+00 - STA. 253+71.75 (BLACKWATER RIVER BRIDGE)

APPROVED BY JESSICA BLOOMFIELD, P.E.	FDOT CONCURRENCE	FHWA CONCURRENCE
Engineer Of Record — DATE	JOHN S. GOLDEN, P.E. FDOT District Design Engineer — DATE	FHWA Transportation Engineer — DATE

PROJECT IDENTIFICATION

FINANCIAL PROJECT ID	416748-3-22-01 AND 416748-3-22-02	FEDERAL AID PROJECT NO.	SFTI 296 R AND SI29 348 R	COUNTY NAME	SANTA ROSA
SECTION NO.	58040	ROAD DESIGNATION	SR 87 CONNECTOR	LIMITS/MILEPOST	ALIGNMENT 1 - STA 100+00 - STA 455+15 ALIGNMENT 2 - STA 100+00 - STA 505+49
PROJECT DESCRIPTION	SR 87 CONNECTOR FROM SR 10 (US 90) TO SR 87 NORTH				

PROPOSED BRIDGE TYPICAL SECTION - CLEAR CREEK BRIDGE - INTERIM AND BUILDOUT

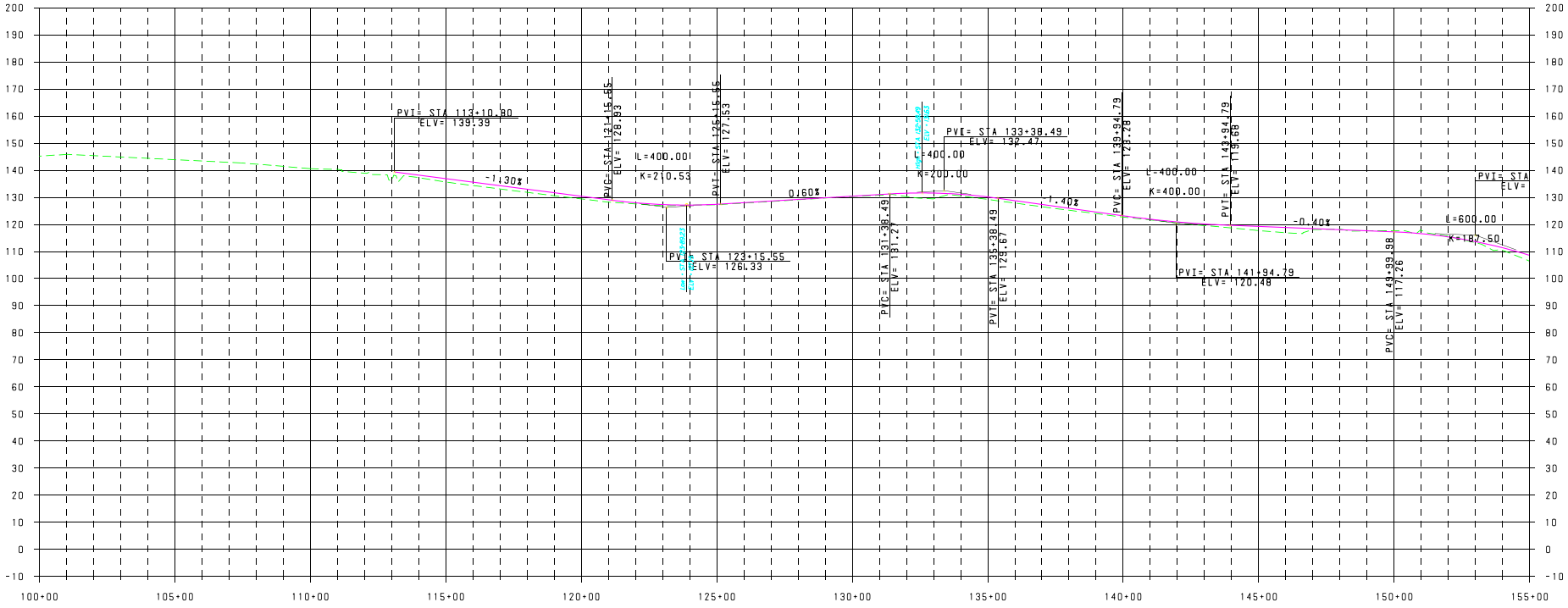


ALIGNMENTS 1 AND 2 BUILDOUT AND INTERIM:
STA. 300+25 - STA. 302+05 (CLEAR CREEK BRIDGE)

APPROVED BY	JESSICA BLOOMFIELD, P.E.	FDOT CONCURRENCE		FHWA CONCURRENCE	
Engineer Of Record	DATE	JOHN S. GOLDEN, P.E. FDOT District Design Engineer	DATE	FHWA Transportation Engineer	DATE

Appendix H

Profile Sheets



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

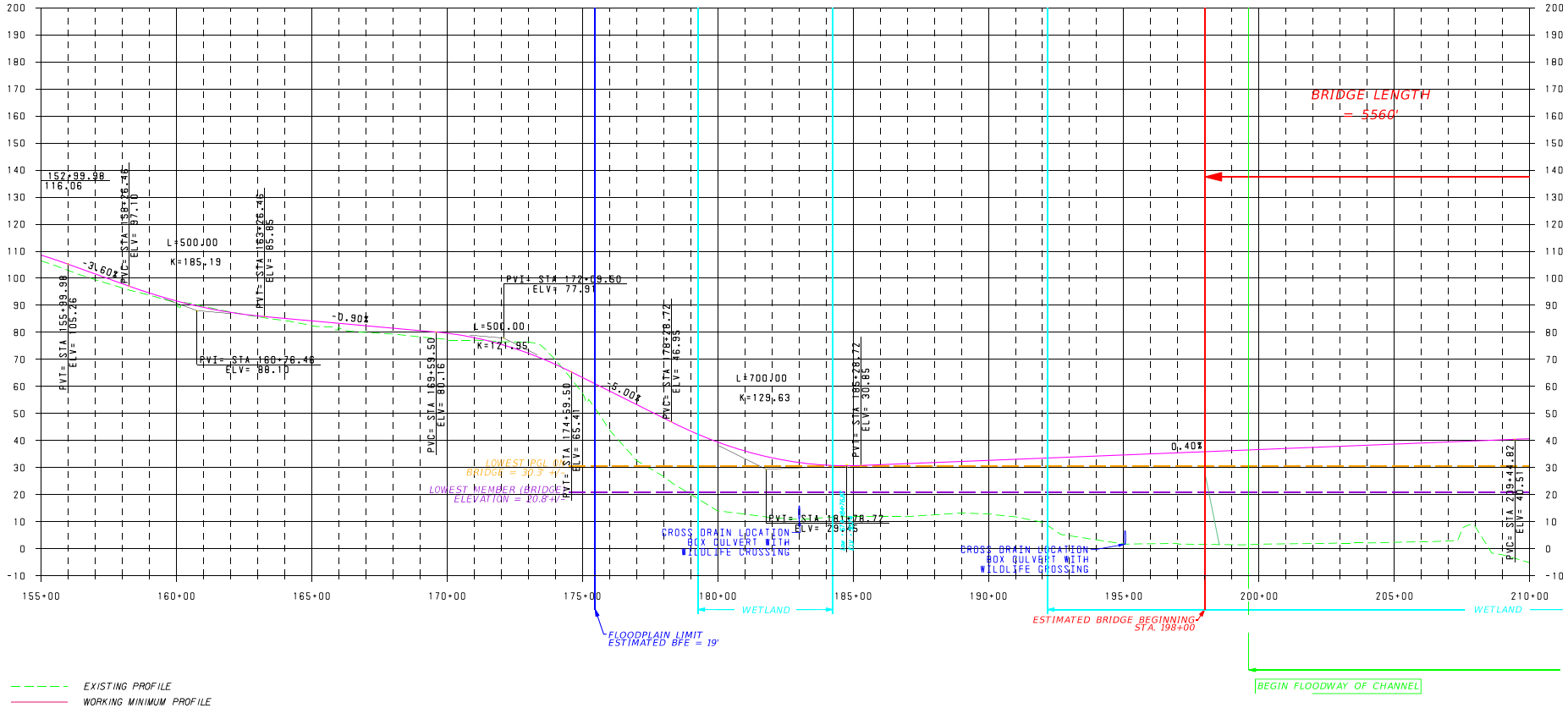
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 1

SHEET NO. 41

NMauntler 2/8/2013 8:19:17 AM F:\E\projects\41674832202\roadway\PROFRD01.DGN



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

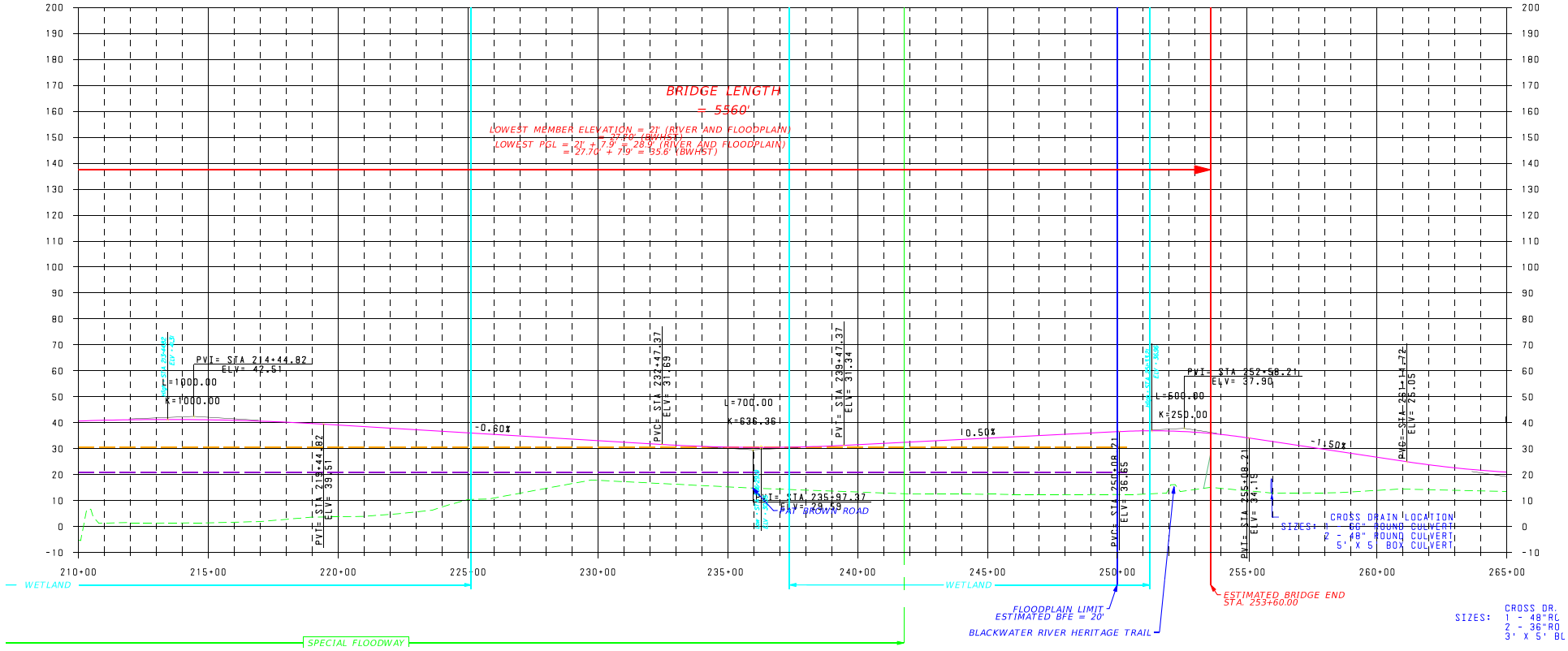
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 1

SHEET NO. 42

NMauntler 2/8/2013 8:19:18 AM F:\E\projects\41674832202\roadway\PROFRD01.DGN



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

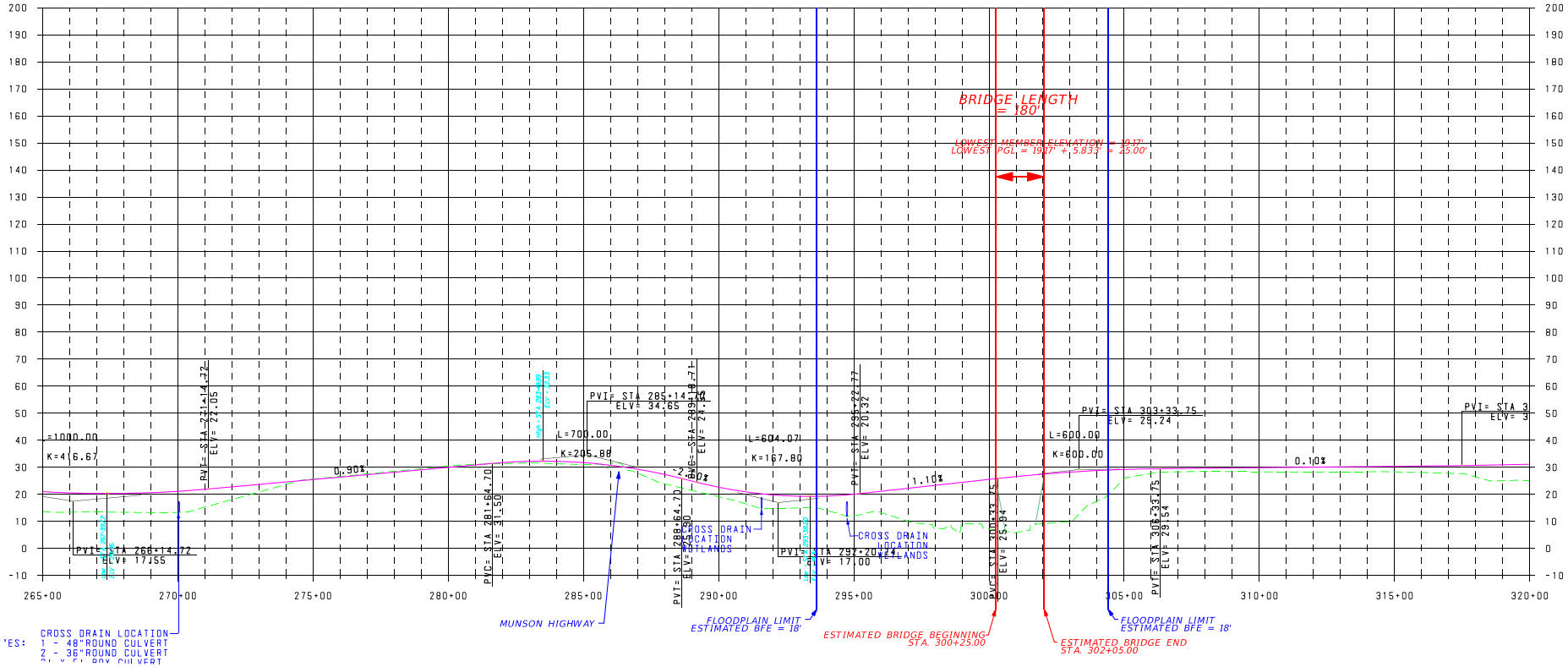
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 1

SHEET NO. 43

NMauntler 2/8/2013 8:19:19 AM F:\E\projects\41674832202\roadway\PR0FRD01.DGN



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

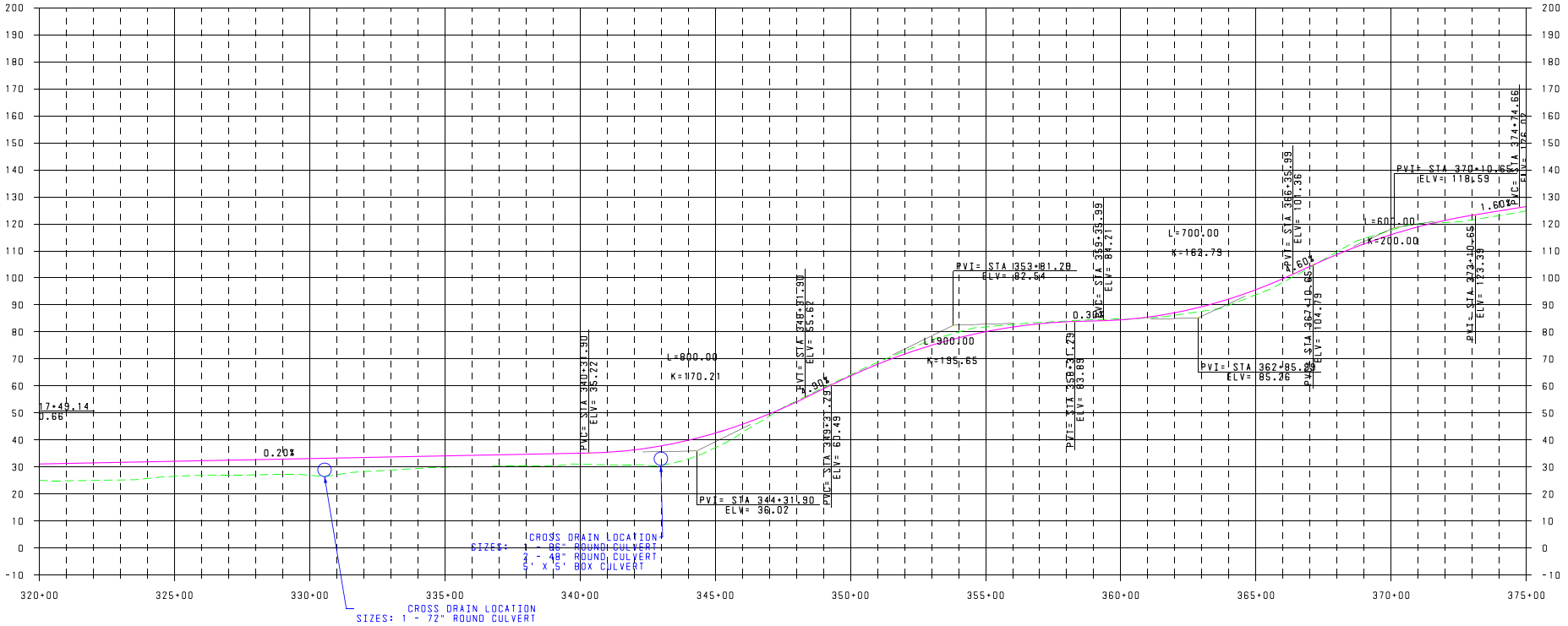
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 1

SHEET NO. 44

NMauntler 2/8/2013 8:19:20 AM F:\E\projects\41674832202\roadway\PR0FRD01.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

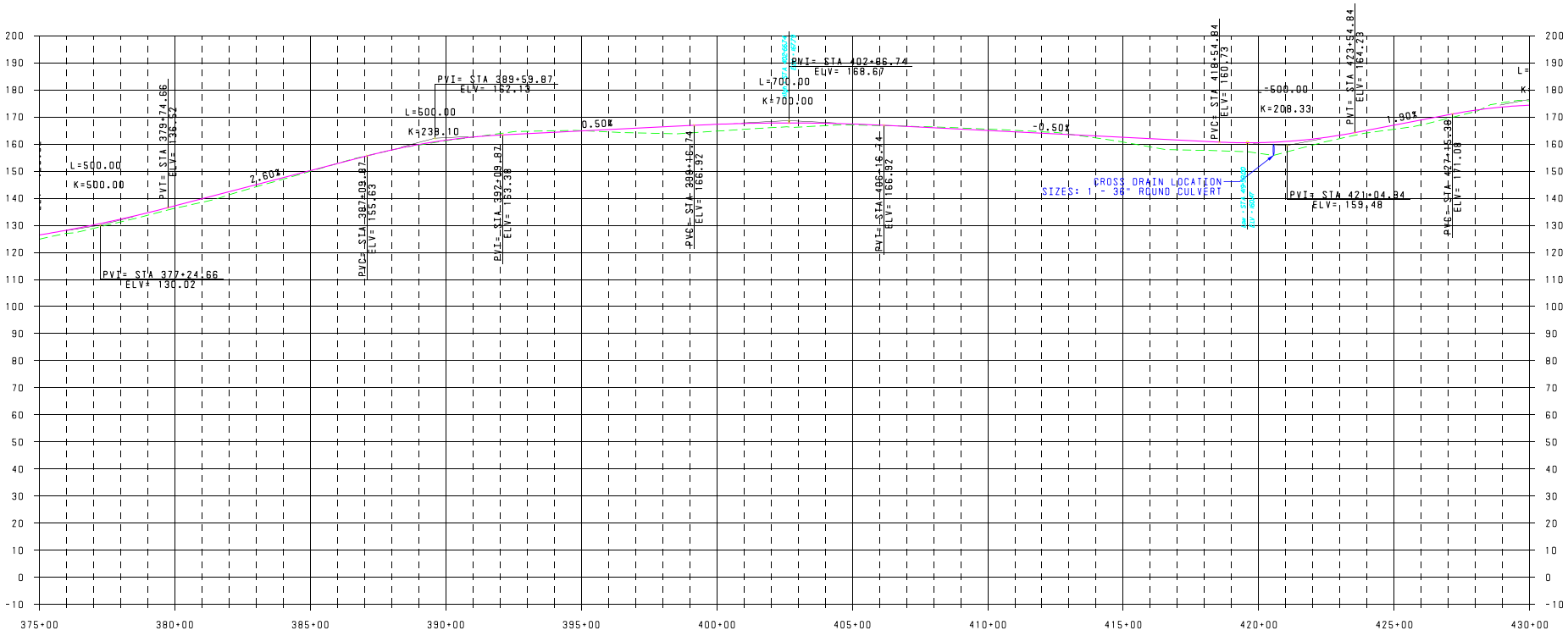
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 1

SHEET NO. 45

NMauntler 2/8/2013 8:19:21 AM F:\E\projects\41674832202\roadway\PR0FRD01.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

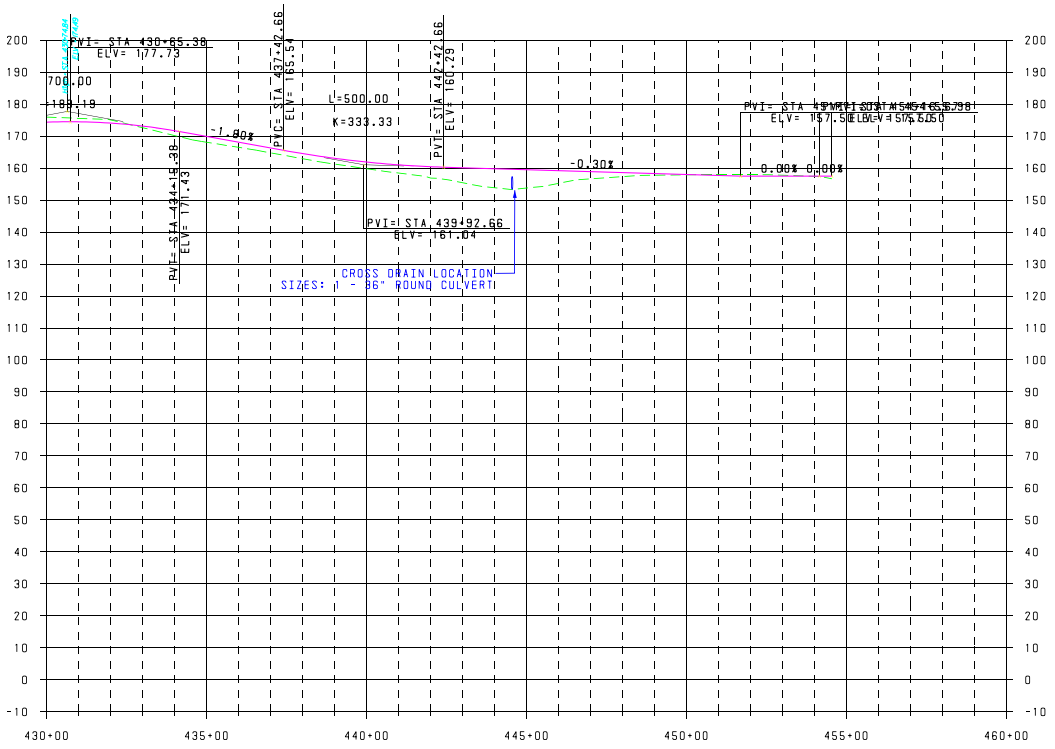
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 1

SHEET NO. 46

NMauntler 2/8/2013 8:19:22 AM F:\E\projects\41674832202\roadway\PROFRD01.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

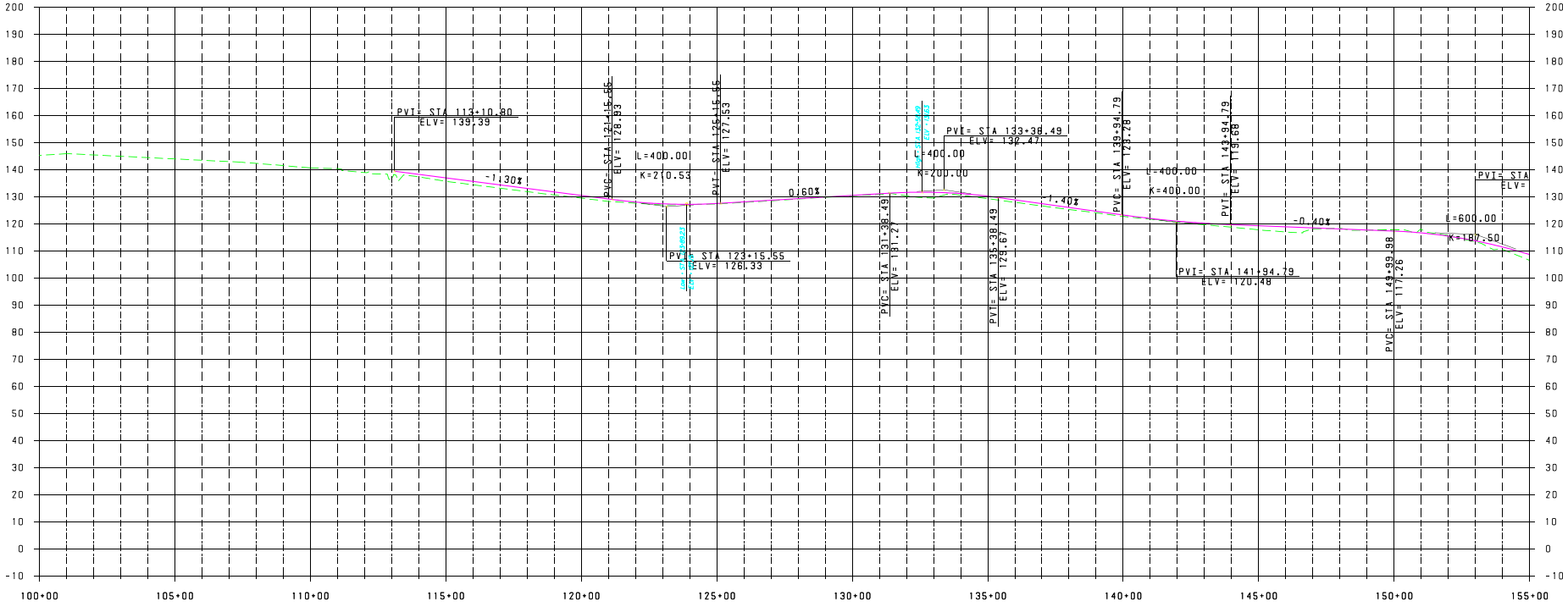
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 1

SHEET NO. 47

NMauntler 2/8/2013 8:19:23 AM F:\E\projects\41674832202\roadway\PROFRD01.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING

● ENGINEERS
● PLANNERS
● SURVEYORS

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

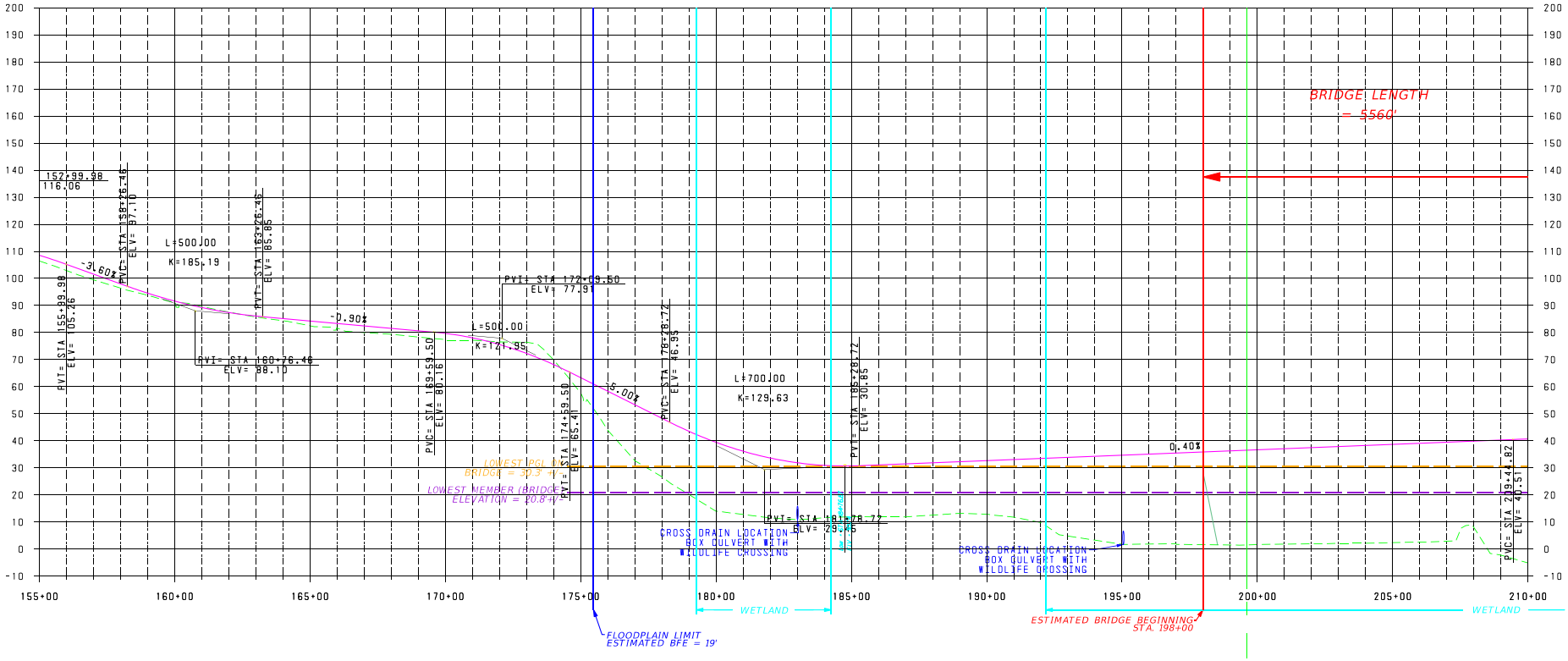
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 46

NMauntler 2/8/2013 8:19:31 AM F:\E\projects\41674832202\roadway\PROFRD02.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

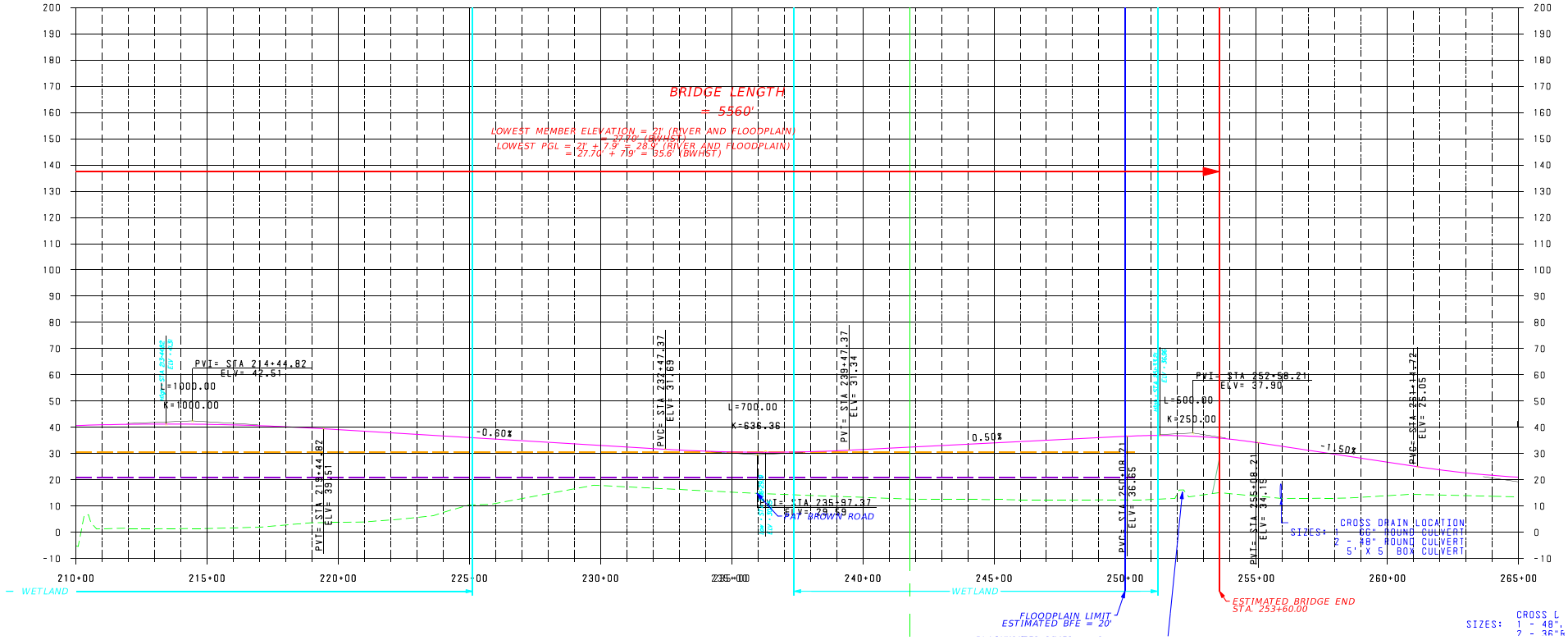
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 47

NMauntler 2/8/2013 8:19:32 AM F:\E\projects\41674832202\roadway\PR0FRD02.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

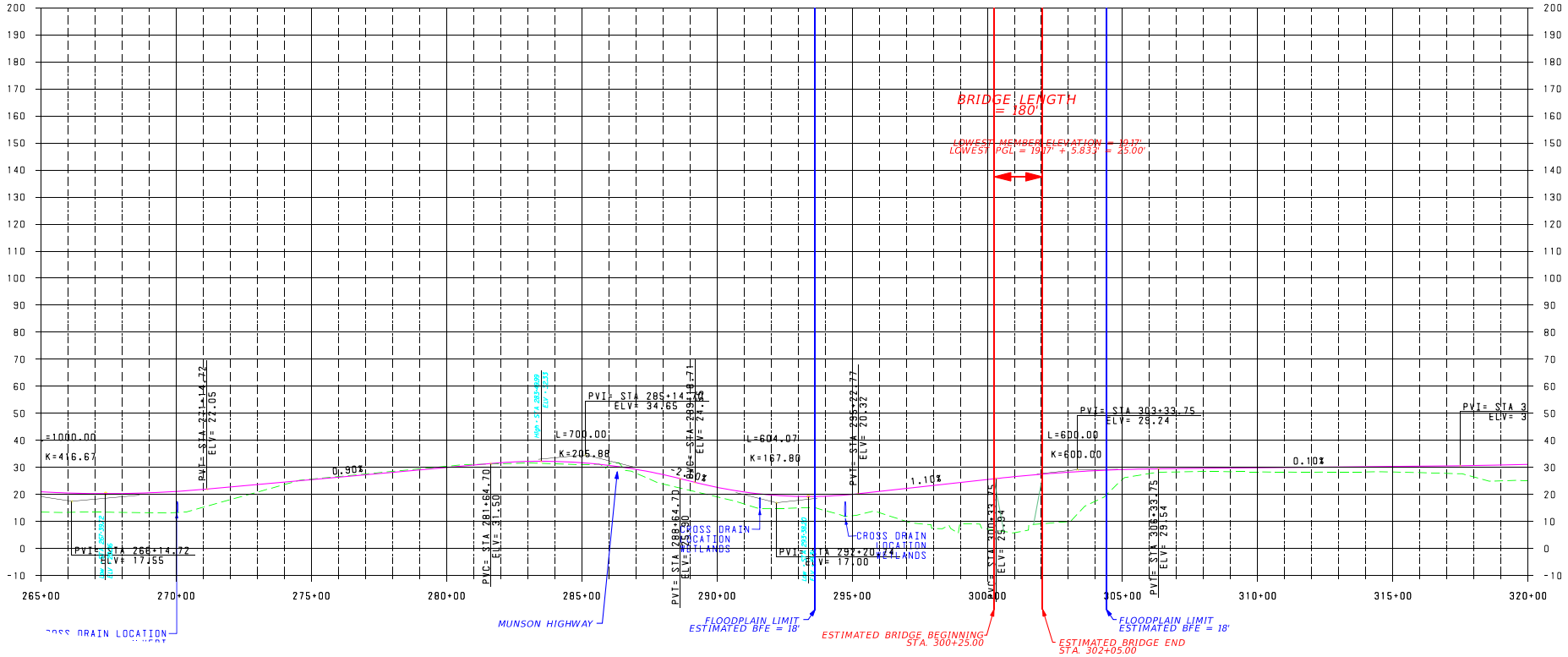
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 48

NMauntler 2/8/2013 8:19:34 AM F:\E\projects\41674832202\roadway\PR0FRD02.DGN



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

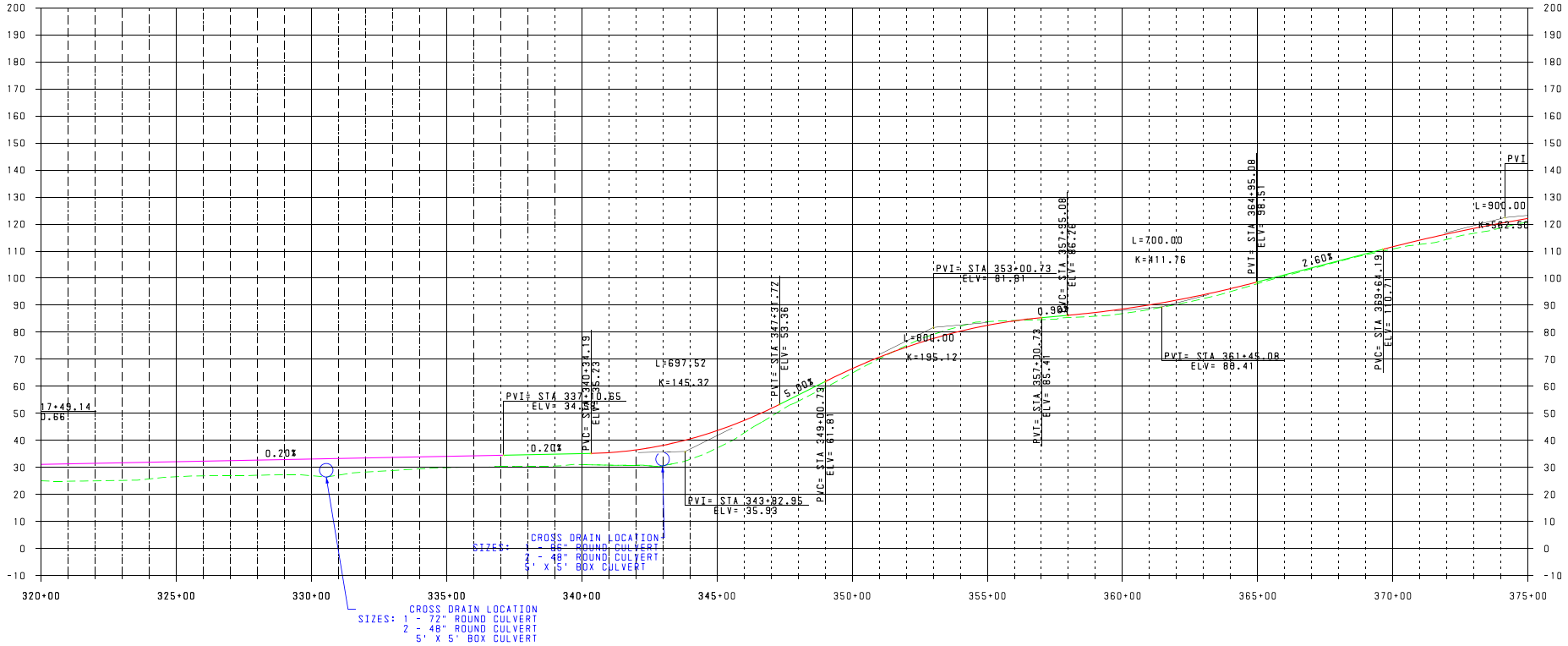
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 49

NMauntler 2/8/2013 8:19:35 AM F:\E\projects\41674832202\roadway\PR0FRD02.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

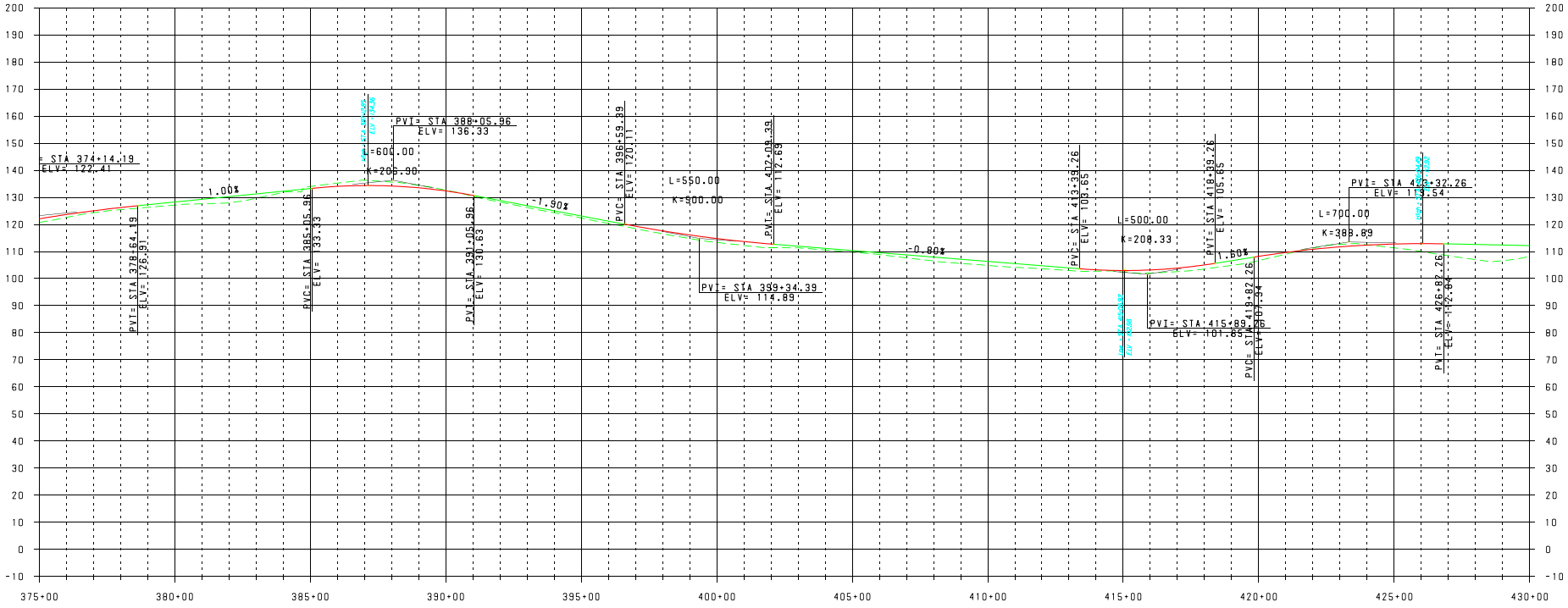
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 50

NMauntler 2/8/2013 8:19:37 AM F:\E\projects\41674832202\roadway\PROFRD02.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

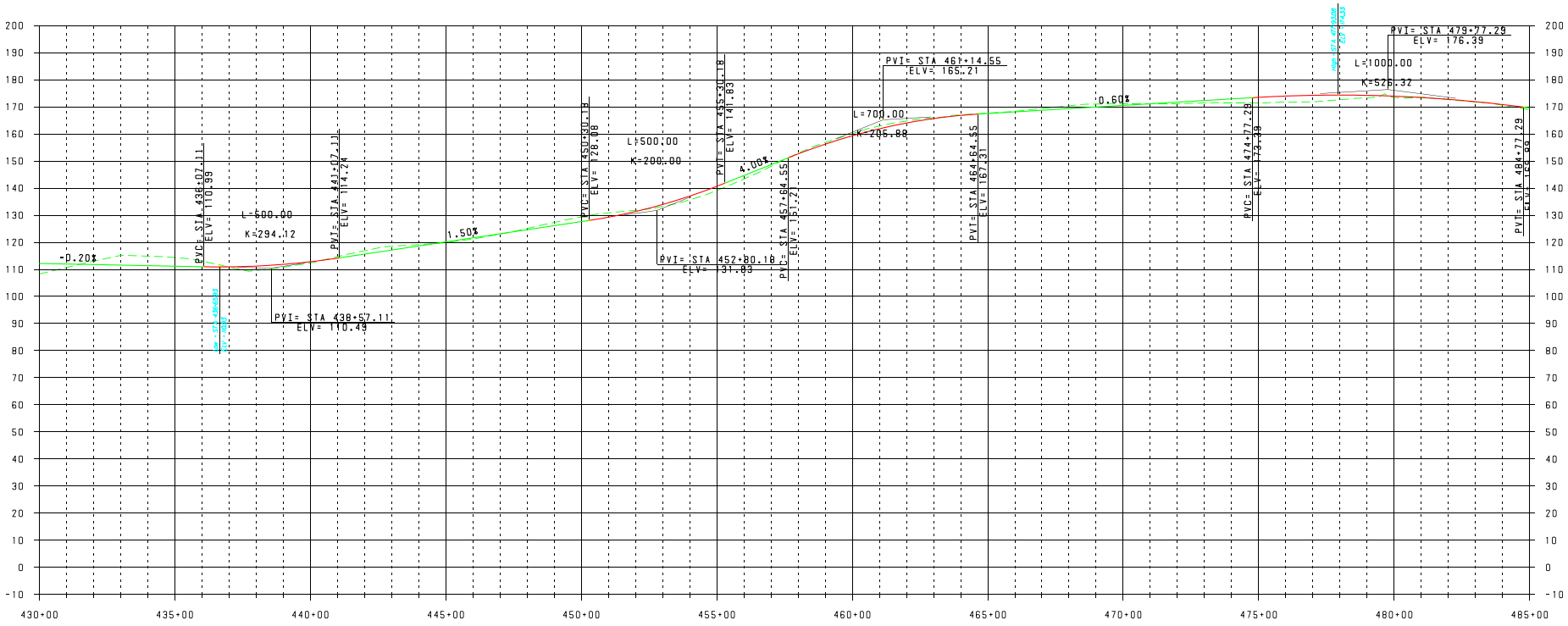
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 51

NMauntler 2/8/2013 8:19:38 AM F:\E\projects\41674832202\roadway\PROFRD02.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

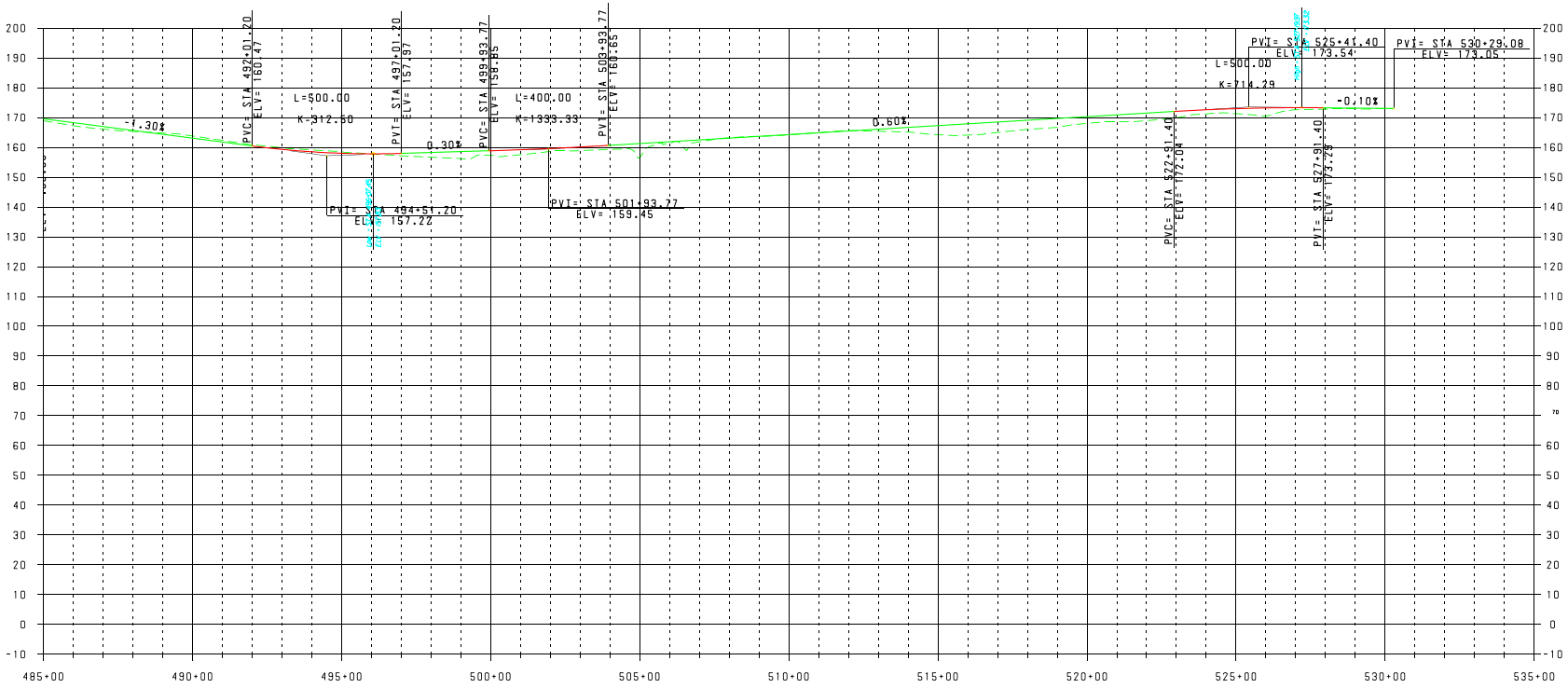
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 52

NMauntler 2/8/2013 8:19:39 AM F:\E\projects\41674832202\roadway\PROFRD02.DGN



EXISTING PROFILE

WORKING MINIMUM PROFILE

V: 1" = 40'
H: 1" = 400'

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

METRIC ENGINEERING, INC.
2616 JENKS AVENUE
PANAMA CITY, FLORIDA 32405
TEL. (850) 872-8044
FAX. (850) 872-8704
FLORIDA CERT. NO. EB-0002294

● ENGINEERS
● PLANNERS
● SURVEYORS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 87	SANTA ROSA	416748-3-22-01, ETC.

PROFILE SHEET
ALIGNMENT 2

SHEET NO. 53

NMauntler 2/8/2013 8:19:41 AM F:\E\projects\41674832202\roadway\PROFRD02.DGN